

INSIDE DOPE

by GEORGE F. TAUBENECK

Stories of the Week
Smart, Sharp Advice
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Stories of the Week

Grimy and grizzled man with a 52-inch chest expansion wheeled into one of Detroit's few bookstores.

"Gimme two Bibles," he boomed. Nobody asked him for an explanation, but he couldn't wait to give it. "Buying one for meself; and the other fer me buddies at the plant. Lotta gambling there. Intend to convert 'em to my reeliion."

Smiled the bookstore proprietor: "I wish you good luck."

"Brother, thank you. Shop steward laid me three-to-one I can't convert 'em."

For peculiar to-themselves reasons, a bloc of legislators resisted a proposal that women be admitted to the state university. They counted noses and discovered that one man ("an undecided") could determine the issue. Here's how they worked on him:

"Sam, every woman admitted to our university will have to submit to a curriculum. And that isn't all. To enter the university a lady will be compelled to matriculate. Furthermore, she must have her credentials examined."

"Hully gee," self-accused the representative from Hillcrest, "I didn't realize that such awful things could happen to our daughters—I shall vote against this coagulation proposal."

A Sunday school teacher was showing off her pupils to their parents.

"Johnny," she prompted, "is there anything that God can't do?"

"Yes, ma'am."

"Try once more. I asked if there was anything that God could not do."

"Yes, ma'am, there is."

"What, pray tell?"

Replied Johnny triumphantly: "He can't please everybody."

Smart, Sharp Advice

"A visiting Englishman, after witnessing some American TV quiz shows, remarked: 'I know your businessmen gave shows to help sell your merchandise; now I find they give merchandise to help their shows. It seems to me it's a vicious circle, and I'm beginning to wonder where it will all end.'—DALLAS W. GOFF.

To try too hard to make people good is one way to make them worse; the only way to make them be better is to do good yourself.—*Ladies' Home Journal.*

Signs of the Times

When the National Warm Air Heating Association panel truck went on the road in 1950, bold letters on the sides proclaimed it the "Warm Air Home Heating Test Laboratory."

New lettering for 1953: "Home Testing Laboratory."

The City Name Game

IF people in the Federal (Pa.) Government Camp (Ore.) don't Cut Off (La.) Wasta (S. D.) the National (Utah) budget may go from Seventy-six (Mo.) billion to Eightyfour (Pa.) or even Eightyeight (Ky.). Congress (Ariz.) must resolve this Enigma (Ga.) and make the Tax Bill (Wyo.) Droop (W. Va.), or we will be at Sixes (Ore.) and sevens. Heavens to Betsey (Ky.), too much Money (Miss.) is going down the Drain (Ore.)! We must end this Folly (Va.) by a bold Experiment (Ga.) or we will find ourselves in the same Old Trap (N. C.). The Ideal (Ga.) solution is Economy (Ind.)! (Note: They're all genuine places, listed in the U. S. Postal Guide.)

Television and Kids

To a good customer we recommended a new television show.

(Concluded on Page 6, Column 1)

ISSUED EVERY MONDAY AT 450 W. FORT ST., DETROIT 26, MICHIGAN. ESTABLISHED 1926.



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Serial Number Bill Vetoed In New York State

ALBANY, N. Y.—Gov. Thomas E. Dewey has vetoed a bill which would have made it a misdemeanor for a dealer to sell electrical apparatus, including appliances, if the manufacturer's serial number or identification mark had been removed, obliterated, or covered.

The bill had been recommended by the Joint Legislative Committee on Unfair Trade Practices and passed by both houses of the state legislature.

Gov. Dewey also vetoed a bill banning the offering or accepting of orders on Sunday by telephone, telegraph, or similar means, and expressed disapproval of another Sunday-selling measure.

The latter would have provided that in case of a violation, only that commodity involved would be subject to forfeiture, instead of the violator's entire stock. Both bills had the approval of the legislative Sabbath law committee.

In vetoing the serial number bill, Gov. Dewey cited a memorandum filed with him by the Committee on Criminal Courts of the Association of the Bar of the City of New York. After noting that the bill would add a new subdivision to Penal Law, Section 436-A, and that it would not apply to resales or to used merchandise, the memorandum said:

"Presently, the various subdivisions of Section 436-A, defining felonies and misdemeanors, provide that wilful, knowing, or intentional defacing or removal of serial numbers is made criminal.

"These subdivisions protect the public from theft and fraud, since in the case of commodities like auto-

(Concluded on Back Page, Column 4)

Freezer Sales Up 66% For NEMA Firms In Feb.

NEW YORK CITY—Sales of home freezers were 66% higher this February than in February 1952 among the 25 manufacturers reporting to the National Electrical Manufacturers Association here.

These manufacturers sold 83,494 freezers during February, just 2% less than they sold in January. Their sales for the first two months combined were 168,608 units, 78% more than were sold in the first two months of 1952.

More home freezers were sold by these firms in the first two months of 1953 than were sold in the entire (Concluded on Page 25, Column 1)

Beef Price Drop Reported Booming Freezer Sales

CHICAGO—Although some trade sources say the drop in beef prices is hurting home freezer sales, William B. Doyle, freezer sales manager for Admiral Corp., claims the decline is having the opposite effect.

Doyle reported recently that heavy marketing of cattle and the resulting bargain beef prices are booming sales of freezers.

Normally, he explained, freezer sales reach a peak in the summer months when people seek storage space for their own home grown vegetables. But the current beef situation is creating increased demand from all parts of the country several months ahead of the usual heavy selling season.

Admiral's production for the entire first half of the year has been put on an allocation basis because of heavy demand, he disclosed. Output schedules have been revised upward.

Thor Blossoms Out with 'Full' Appliance Line

CHICAGO, April 23 — The Thor Corp. at a distributor showing here today introduced its long-rumored line of household refrigerators together with a line of home freezers, built-in electric range models, ironers, and new washers and clothes dryer models.

Thus, Thor is now a "full line" manufacturer in the major appliance field although its approach to the distribution of these products may be somewhat different from that of other manufacturers.

"We are fundamentally a laundry equipment producer," states John Hurley, Thor president, "but these new products broaden the market and profit opportunities for Thor distribution."

Hurley said that 40% of Thor distributors do not have a refrigerator line.

Since Thor's range line is all of (Concluded on Page 25, Column 3)

SMI To Stress Profitable Sales Plans May 24-27

CLEVELAND—Results of intensive time and motion studies of the layout of meat departments and in packaging methods recently completed by the U. S. Department of Agriculture will be previewed at the 16th annual convention of the Super Market Institute to be held at the Public Auditorium here May 24 through 27.

This presentation is one of several programmed around the convention theme of "How to Sell More—Profitably," according to Ray E. Dillon, general convention chairman.

A sellout of exhibit space has been announced, with 425 manufacturers and suppliers displaying their newest items in 556 booths, a record for the Super Market Institute.

Included are a dozen refrigeration manufacturers and one firm specializing in air conditioning. Among these are Annapolis Yacht Yard's Freezer Box Div., Evans Mfg. Co., Federal Refrigerator Mfg. Co., Free-Rite Div. of Bailey & Perkins, Friedrich Refrigerators, Frigidaire, C. V. (Concluded on Page 25, Column 4)

'Dealer Day' Opens Restaurant Show May 11

CHICAGO—The 34th annual National Restaurant Association convention and exposition will get under way at the Navy Pier here on May 11, which has been set aside as "Dealer Day."

On that day, there will be a special preview of the exposition for jobbers and dealers who represent the exhibiting firms and contact the restaurant market directly, with the show being open from 9 a.m. to 6 p.m. Sessions begin for restaurateurs May 12 and continue through the last day, May 15.

Around 400 firms have reserved space in the 771-booth show. Both wings of the Navy Pier will be used to house exhibits.

General convention sessions in the mornings will be held in the auditorium at the east end of the south wing of the pier. Special interest sessions in the afternoons will be held in smaller meeting rooms in both the north and south wings.

Sale of Kerotest To Pittsburgh Firm Under Negotiation

PITTSBURGH, April 23 — Preferred stockholders of Kerotest Mfg. Co. have agreed to sign a composition agreement which will permit sale of the firm "as a going concern" to Miller Printing Machinery Co. of Pittsburgh, William McFall of Commonwealth Trust Co., Pittsburgh, temporary receiver of Kerotest, told the NEWS today.

Negotiations have been under way for the sale of Kerotest since it was put into a receivership several weeks ago.

McFall said that if the stockholders sign the agreement, he would ask the court for his discharge as receiver. He said he thought definite action would be taken by Friday, April 24.

According to McFall, the Kerotest sales force is now on a stand-by basis. A skeleton production force was continuing assembly operations from inventory on hand.

W. T. Clawson, advertising manager for Miller, said that if the deal goes through, his firm intends to continue operating Kerotest in the refrigeration field.

(Concluded on Page 4, Column 5)

G-E Promotes Linder, Rieger To Manage Major Appliance Div.

LOUISVILLE, Ky. — Clarence H. Linder, vice president and general manager of General Electric Major Appliance Div., has been named to a new post as vice president of engineering for the General Electric Co. with offices in New York City, Ralph J. Cordner, General Electric president has announced.

Linder will be succeeded at Louisville by Charles K. Rieger, vice president and general manager of the Small Appliances Div., headquartered in Bridgeport, Conn.

Linder will succeed Harry A. Winne of Schenectady, N. Y., long recognized as one of the company's top engineering authorities, particularly in the field of atomic energy. Winne has been named to a new post performing special assignments for Cordner in anticipation of retirement from the company in the latter part of this year.

(Concluded on Back Page, Column 5)

Westinghouse Shows Compact Self-Contained Conditioner for Homes

HYDE PARK, Mass.—A new self-contained residential air conditioner that "takes up less space than the average refrigerator yet is capable of air conditioning an entire house" has been announced by the Air Conditioning Div. of Westinghouse Electric Corp.

The compact, cabinet-type unit, called the RU-31, requires only water and electrical connections to operate. Though especially suited for use with forced warm air heating systems, it can also be used independently with its own fan and ductwork if desired. It can be thermostatically controlled and requires little maintenance other than the changing of air filters, according to the company.

"In recent months Westinghouse engineers have talked with homeowners and home builders to discover what it is they want in a residential air conditioner," W. B. Cott, sales (Concluded on Page 4, Column 5)

CRMA Sees Good Future, Keen Competition

Endorses 'Term' Buying, But Cautions Against Allowing Too Loose Credit

CHICAGO—Commercial Refrigerator Manufacturers Association members, at their recent Spring meeting here, took a searching look at the economic situation and concluded that the positive, optimistic factors outweigh the negative factors by a comfortable margin, and cast a wary eye on a tendency to "loosen up" too much on credit terms for the purchase of their products.

In its discussion of "terms" the CRMA membership endorsed wholeheartedly the standard financing requirements for commercial refrigerator equipment adopted by the major finance companies some years ago. These standards call for a minimum down payment on all contracts of 20%, with a 24-month maximum on balances of \$3000 or less, extended to 36 months for balances in excess of \$3000, with equal monthly instalments.

Based on a variety of considerations, such as the continued trend toward larger retail food store units as well as greater emphasis on modernization and fuller use of self-service equipment by smaller merchants facing keener competition from the chain and supermarket operators, those executive attending the Spring meeting shared the opinion that although business will be more difficult to develop, the potential has been little affected by the deflationary influences encountered in some other lines of business. Because the industry is directly linked with retail food distribution, the inherent stability of that field provides a form of insurance against any but the severest economic downswing, it was pointed out. "People must eat."

Pressure for smaller down payments and longer terms in financing their equipment purchases is coming mostly from supermarket promoters who, finding the banks unwilling to extend credit to establish new stores in areas already strongly dominated by similar large-volume units, want the equipment manufacturer to assume a large part of the risk.

It was indicated that there are few, (Concluded on Back Page, Column 1)

Higher Steel Prices Seen As Republic Ups Charges

CLEVELAND—What is expected to be the first in a series of price increases on steel was announced recently by Republic Steel Corp. here.

Republic raised the prices of some extra charges for servicing steel bars and other forms to conform to customer's specifications. The increases amounted to \$2.50 to \$5, per ton. Base prices were not affected.

Other companies are expected to follow Republic's lead and may raise base prices. Though the companies say they are squeezed now, they face new bargaining negotiations with the steel workers next month. The steel workers are expected to ask for higher wages.

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Automatic Thermostat Offered for Mitchell Units

CHICAGO—An automatic thermostat that keeps an air conditioned room at the desired temperature level has been announced by Eugene A. Tracey, vice president in charge of the Air Conditioning Div. of the Mitchell Mfg. Co.

Available as an accessory for use on the $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$, and 1-hp. Mitchell units, the thermostat maintains an even degree of cooling by controlling the operation of the Mitchell room air conditioner compressor power unit.

For coldest operation, the control knob is turned to allow the compressor power unit to function continuously. Intermediate cooling is obtained when the knob is switched to the position that turns the compressor power unit off until the desired level of cooling is reached. In either position the fans run at all times.

Complete instructions for installation are provided in the Mitchell thermostat kit. The device installs on a bracket provided on all 1953 Mitchell room air conditioners, and locates on the dividing wall under the ventilating damper screen.

All parts necessary for installation are included in the thermostat kit. These are: the thermostat itself, one control knob, wiring leads, two mounting screws, two lockwashers, and the wire nut connector.

Operating range of the thermostat is 65° F. to 85° F., and the operating differential is 5°. Control is provided by a sealed sensitive vapor-filled capillary tube.

The automatic thermostat is an accessory that will sell for \$5.

Michigan Appliance Retailers Hold Meeting In Grand Rapids; Hear Industry Leaders

GRAND RAPIDS, Mich.—On April 22 the largest gathering of dealers ever initiated by the retailers of Michigan was held here at the Panslind hotel.

Approximately 300 retailers heard such industry leaders as H. G. Blakelee of Cory, Fred Kaiser of Detroit-Michigan Stove Co., and J. B. "Kip" Anger of Motorola.

They also heard J. W. Christensen of Hamilton, Mort Farr, past president of the National Appliance & Radio-TV Dealers Association, and Bob Justis, Newport, Dela. dealer.

General chairman of the affair was Dick Evenhuis of Evenhuis Appliance Store, Grand Rapids, president of the Grand Rapids Appliance Dealers Association, according to the announcement.

Additional Consumer Credit Needed To Maintain Durable Goods Production

CHICAGO — Unless consumer credit is boosted above prevailing levels, it will not be possible to maintain the present rate of durable goods production, according to R. Early O'Keefe, executive committee chairman of the American Finance Conference.

O'Keefe argues that the nation's instalment debt amounts to 7.2% of its disposable income, which is approximately the same percentage as in 1940.

He stated: "The 1940 level of

Edwin Finkel, Phillip Benn Appointed to Jordan Field Sales Force

PHILADELPHIA — Two new members of the Jordan Refrigerator Co. field sales force were announced here by Harry Fogel, vice president in charge of sales.

Edwin Finkel, recently returned from army service, has joined the field sales force and will work out of the executive offices here, Fogel announced. Finkel has been assigned mainly to sales promotion of Jordan's upright home freezer line. Before returning to the Army two years ago he had been in sales work and was manager of a finance company.

Phillip Benn, formerly in appliance and wholesale food businesses, will work out of the home office also. However, he will direct his attention to sales of both the commercial and domestic lines, Fogel further indicated.

M-H Builds New Plant In Los Angeles Area

GARDENA, Calif.—A major expansion of West Coast production facilities and employment is being undertaken by Minneapolis-Honeywell Regulator Co., it was disclosed here recently when ground was broken for the first unit of a new factory that ultimately is expected to employ 2,000 persons.

The new plant, to be operated by the firm's appliance controls division, will occupy a newly acquired 16-acre site in this Los Angeles area community. It will enable the firm to expand production of automatic controls for water heaters, floor furnaces, wall heaters, and central heating plants, which now is being carried out at a smaller plant in Los Angeles.

The first unit of the new plant, a machine shop, is expected to be completed by June, according to architect Kenneth H. Neptune. Other sections will be erected in progressive stages. The factory will be of steel frame, reinforced concrete construction, and functional design. It will have a steel roof deck with saw tooth pattern. Two large parking lots will be provided for employees and customers.

Honeywell already has more than 800 employees in California, working in the present plant in Los Angeles, and in sales offices in Los Angeles, San Francisco, Sacramento, and San Diego.

UsAirco Store Conditioners Have Temperature Controls

MINNEAPOLIS—Additional information on the specifications of United States Air Conditioning Corp.'s air conditioners has been provided by the company since publication of this data in the April 13 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Contrary to the listing published, all models of UsAirco store conditioners are provided with temperature controls, including a dual-stage control on the 10-ton model, which has two complete refrigeration circuits, according to M. A. Stuart, advertising and sales promotion manager.

It was further pointed out that all window-type room conditioners are equipped with air pump-out.

G-E Presents Heat Pump to Dealers at Fla. Meeting

WINTER PARK, Fla.—General Electric Co.'s heat pump was one of the 1953 G-E products presented to dealers from all over Florida at a meeting held here recently by Mechanical Contractors Supply, Inc., state-wide distributor of G-E heating and air conditioning equipment.

Available in 3 and 5-ton capacities, the heat pump is of the air-to-air type which requires no accessory equipment for its operation. This eliminates the need for fuel systems, chimneys, cooling towers, or extensive piping, it was pointed out.

Dealers were told that one of the outstanding features of the 1953 G-E residential conditioning line is that 190 combinations are available. It was also stressed that the equipment is so designed as to be integrated into a single unit, providing both air conditioning and heating.

In addition to the heat pump, the dealers were shown commercial air conditioning equipment and the year-round residential air conditioner.

The "FD" line of commercial equipment now carries a five-year warranty covering not only the compressor but also the coil and controls, dealers were informed. It is available in 2, 3, 5, 7½, 10, and 15-ton capacities.

In presenting the "RA" year-round residential conditioner, speakers stated that cooling equipment is available in 2, 3, and 5-ton sizes and the homeowner has a choice of 12 sizes and types of furnaces. Furnaces can be had for oil or three types of gas—natural, manufactured, and LP.

Paul Spellman and George Collins, executives of Mechanical Contractors Supply, assisted by General Electric personnel, made the product presentations.

Sanford Kulick Named Faysan Gen. Sales Mgr.

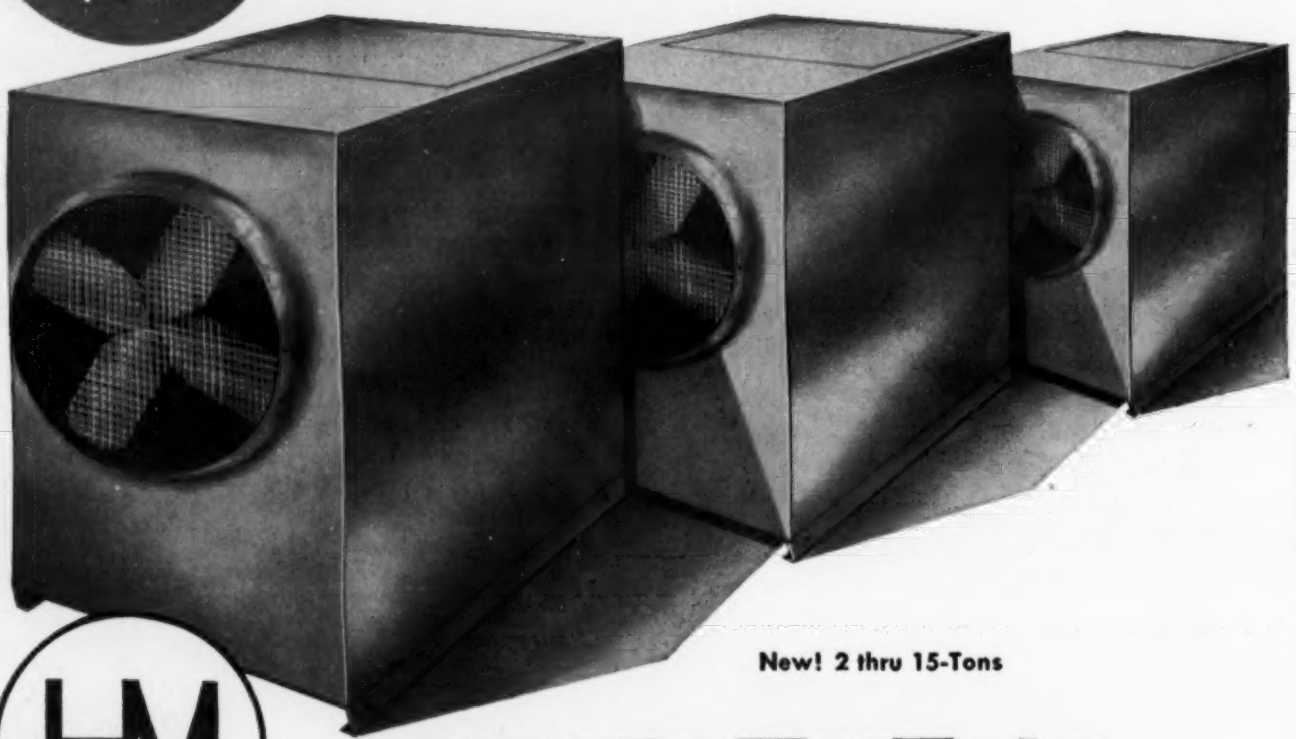
BUFFALO — Faysan Distributors Inc., appliance wholesaler, announced the appointment of Sanford C. Kulick as general sales manager.

A son of president Ben L. Kulick, he has been with the company for six years. He is succeeded as sales promotion manager by Stewart M. Levy who has been manager of the order department.

ANOTHER
HALSTEAD &
MITCHELL
FIRST

20-Year Guarantee!

ON THE WETTED DECK SURFACE



New! 2 thru 15-Tons

RESIDENTIAL COOLING TOWERS

PRICED FOR THE HOME MARKET

Price-wise these Halstead & Mitchell Residential Cooling Towers throw open huge segments of the home and small building market to air-conditioning. Here is the development for which the industry has been waiting. Check prices today!

NOW REQUIRED IN MANY AREAS

Residential Cooling Towers recirculate precious water... meet requirements of municipalities which prohibit wasting cooling water to sewers. And low cost H&M units take residential air conditioning to the suburbs and rural area... recirculate from a cistern if need be!

MADE FOR REAL OPERATING ECONOMY

Economical, lastworthy... low operating cost matches low initial cost. Efficient gravity-type distributing pan eliminates windage loss since atomizing by spray nozzle is unnecessary. Low pump head pressure is another bonus of gravity distribution. And maintenance is a snap!

FAMOUS HALSTEAD & MITCHELL QUALITY

Here's all the quality for which Halstead & Mitchell Cooling Towers are world famous—including the 20-year Guarantee on the wetted deck surface of pressure-treated creosoted wood, against attack by rotting or fungi growth. Stainless steel fans and shafts, plus individual cabinet coatings of Vinsynite, Vinyl Zinc and chlorinated rubber add important years of life. The complete assembly is with Everdur bolts... disassembly is easy even after years of service.

AT LEADING WHOLESALES EVERYWHERE

Write for descriptive bulletin from Halstead & Mitchell, one of the world's largest manufacturers of water-cooled Cleanable Condensers, and Cooling Towers up through 100-tons.



OFFICES: BESSEMER BUILDING • PITTSBURGH 22, PA.



More beer sold from every keg with Beverage-Air DRAFT SYSTEMS

It's a fact! Thousands of satisfied users over the country are claiming 20 to 30 more glasses of beer from each keg with Beverage-Air Draft Systems... more and more breweries are selecting Beverage-Air equipment for use in visitor's rooms and at trade conventions.

Why? Because Beverage-Air Draft Systems are designed to eliminate waste through...

- Patented "air-conditioned" faucets that keep the beer cooled to the correct serving temperature... never any wild, warm or stale beer.

- Unrestricted, one-size flow lines and tap rods assure a smooth even flow of beer... less than 1 oz. of beer contained in the lines from the faucet tip to the keg, the perfect storage place.

With these economy features, Beverage-Air installations pay for themselves in no time at all.

WRITE TODAY FOR COMPLETE INFORMATION ON BEVERAGE-AIR EQUIPMENT AND DIRECT MAIL LITERATURE FOR MAILING TO YOUR CUSTOMERS.

THE PUNXSUTAWNEY COMPANY
PUNXSUTAWNEY, PA.

New Refrigerant, Residential Conditioning, Heat Pump Topics of Michigan RSES Meeting

LANSING, Mich. — Educational talks covering such varied topics as a new refrigerant not yet commercially available, residential air conditioning, and heat pumps were featured at the fourth annual convention of the Michigan State Association of RSES held at the Olds hotel here recently.

Some properties of "Freon-13" were outlined by R. L. Williams, refrigerant sales manager of du Pont's Kinetic Chemicals Div., who told the group that this new member of the "Freon" family won't be generally available for several years.

"It's now being tested by six manufacturers, and this generally takes five to seven years," he said. "It was first produced in 1946 and ordinarily it takes about 10 or 15 years before a new refrigerant comes into general use. It's not a commercial product with us yet."

INTENDED FOR -75° TO -125° F. RANGE

The new refrigerant, which boils at -115° F. at atmospheric pressure, is primarily intended for systems producing temperatures in the range of -75° to -125° F., Williams said.

Other talks given at the convention included "Estimating and Installing Air Conditioning in a Residence," by Lee A. Miles of Mueller Furnace Co.; "Design and Application of Evaporator Coils," by William J. Donovan, director of engineering, Bush Mfg. Co.; "Centrifugal Compressors," by Joseph E. Appelt of the Trane Co.; "Heat Pumps," by A. B. Newton, vice president in charge of engineering, Acme Industries; "How to Make Your Business Pay," by Budd J. Rutter of Capitol Business Service; "Advantages of a Statewide B-9 Code," by James Barrett of the Michigan State Health Department, and "Health and Safety Are Our Business," by R. D. Hollingsworth, RSES international safety director.

DIRTY FILTERS CAUSE TROUBLE

In his discussion of residential air conditioning, Miles pointed out that 95% of the service in this field has been due to dirty filters.

"With domestic air conditioning, the filters must be changed at least twice a summer, and above all, don't run an air conditioning system without a filter."

The other 5% of service has been due, Miles said, to reduced air quantity across the coil which can be caused by (1) bad blower bearings, belts, or motors; (2) improperly tightened blower belts; or (3) closing off room registers and getting the system out of balance.

Discussing evaporator coils, specifically unit coolers, Donovan of Bush explained the basic factors of design and suggested a practical method of determining whether poor design of such a coil is the cause of inadequate refrigeration.

IS IT POOR DESIGN?

This involves (1) making certain first that the expansion valve is feeding the coil properly, (2) calculating the heat load of the box, and then (3) comparing the amount of air delivered with the quantity required. It may also be advisable to check refrigerant pressure drop through the coil and its individual circuits.

"If air c.f.m. and refrigerant pressure drop are within reason, then there is little else you can do," Donovan said. "The unit is probably deficient in surface or the over-all transfer coefficient is low because of improper design. A few simple checks, however, will often confirm your conclusions on capacity trouble and will enable you to recommend whatever removals are necessary with more confidence."

A general review of the heat pump was presented by Newton, who also gave some details of a heat pump recently installed in a Michigan bank. This installation, he said, uses two Acme packaged heat pump units. One is a 5-hp. unit controlled by outdoor temperature which supplies hot water only to radiant floor coils. The other is a 7½-hp. unit which feeds hot water for heating or chilled water for summer cooling to convectors. The two systems work independently.

Newton cautioned the refrigeration service group that "heating problems have occasionally been ignored when

refrigeration people installed heat pumps."

One example cited was that of omitting vents on water line piping in systems where a heat pump supplies hot or chilled water.

PUBLIC KNOWS WHAT IT WANTS

Questioned whether heating or refrigeration men were installing heat pumps, Newton replied: "It's still pretty much refrigeration men, but, as I've previously noted, the general public seems to be ahead of refrigeration men in their interest in the heat pump."

(Newton's talk, and some of the others, will be published in detail in future issues of the NEWS.)

In his talk on centrifugal compressors, Appelt described the major components and features of Trane's "Centravac" models, pointing out that these machines are used only for larger installations, the smallest being 50 tons.

Definitions of some of the basic terms used in economics were outlined by Rutter, who stressed the need for good knowledge of economic laws for success in business.

"Today this is the age of specialization. I would never think of trying to repair a refrigerator, but why do

many of you want to keep your own records and handle your own tax problems?"

During the convention the Michigan RSES group also elected new officers for the coming year. Arne Perttola is president; Glenn Ornsby, first vice president; Ferd Potter, second vice president; Virilus Solomon, secretary; Harry Hondorp, treasurer; Clare Babcock, sergeant-at-arms, and Clyde Snyder, educational director.

Seeger's 6-Month Sales Up 51% over Year Ago

ST. PAUL—Sales of Seeger Refrigerator Co. totaled \$52,384,520 in the six months ended Feb. 28, 1953, an increase of 51% over sales of \$34,685,244 in the corresponding six months the year before, John S. Holl, president, reported to stockholders.

Net earnings after taxes were \$2,395,763, equal to \$2.14 a share on the company's capital stock, compared with \$2,066,513 or \$1.87 a share in the like six months of the preceding year.

Holl pointed out that Federal excess profits taxes in the latest six months reduced Seeger's earnings by approximately 40 cents more than in the first half the year before.

"The demand for Seeger products has been good during the first six months' period and present indications are that this demand should continue," Holl said.

Electric Assn. of Chicago Sponsors Air Conditioning Show To Stimulate Room Cooler, Dehumidifier Sales

CHICAGO—To help build sales for room air conditioners (both window-type and central units) and for dehumidifiers, the Electric Association of Chicago is sponsoring an Air Conditioning Show in the Edison building at 140 South Dearborn St. from April 20 to July 17.

Chairman of the committee which is organizing the show is Joseph Bilheimer of Philco Distributors, Inc.

Although displays were installed during the week of April 20, the show will not officially open until April 27. The intensive promotion period will be from the opening date to May 29. Displays will continue through July 17.

Distributors of 14 brand name products, together with Commonwealth Edison Co., have signed up to participate in the show and help to finance it on a subscription basis:

They are: Admiral—Appliance Distributors, Inc.; Carrier—Temperature Equipment Corp.; Crosley — The Harry Alter Co.; Fresh'nd Aire—Dobkin Electrical Supply Co.; Frigid-Aire Sales Corp.; General Electric—R. Cooper, Jr., Inc.; Gibson—Motorola-Chicago Co.; International Harvester—Bercraft Corp.

Mitchell—Graybar Electric Co., Inc., Hallcrafters Chicago Co.; Philco — Philco Distributors, Inc.;

RCA—RCA Victor Distributing Corp.; Remington — Amana-Chicago Corp.; Vornado—Hyland Electrical Supply Co.; York—Murphy & Miller, Inc.

It is estimated that the show will attract an attendance of more than 100,000 people. Special displays, advertising, a press preview, and a consumer contest are being organized to help build attendance during the show.

Special displays which dramatically illustrate what air conditioning units and dehumidifiers can do are being arranged by Everett Westman, manager of Commonwealth Edison Co.'s Electric Shop where the show will be held, and a member of the association's show committee.

An advertising budget of \$12,000 has been approved.

One room air conditioner will be awarded each week for 13 weeks to the winner of a 25-word write-in contest on: "I Need a Room Air Conditioner Because—" Contest entries will be judged by The Reuben H. Donnelly Co. To tie in dealers with the program, contest entry blanks will be made readily available at dealers' stores.

Dealers will be furnished colorful cards and flyers to display in their stores as their contribution toward building attendance at the show.

now! Heat or refrigeration from ONE system

with **ALCO** 4-WAY REVERSING VALVES

field-tested 6 years

You flip a switch and the 4-WAY VALVE reverses the cycle... converts the evaporator to a condenser (or vice versa) for heat or refrigeration.

MANY APPLICATIONS:

- Heating and air-conditioning of homes and large buildings.
- Hot gas defrost in commercial refrigeration installations.
- Product temperature control in railcars and trucks.
- Tight seating, positive shifting. Made in sizes ranging from ¾" to 3" connections.

Write today for complete information.

SEE YOUR ALCO WHOLESALE

ALCO VALVE CO.

853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers of Thermostatic Expansion Valves, Evaporator Pressure Regulators, Solenoid Valves, Float Valves, Float Switches

Get Moisture the FIRST Time!

The moment Thawzone is introduced into the system it starts to combat moisture.

You do not have to wait for the moisture to come around. Thawzone acts in all parts of the system at once.

Thawzone actually destroys moisture. . . . Helps prevent corrosion by neutralizing acids. . . . Helps prevent copperplating. . . . Will prevent as well as overcome moisture trouble. . . . A patented invention (cannot be copied). . . . Drying action not "smothered" by oil. . . . Can't cause pressure drop.

Costs only about 8¢ per lb. of refrigerant treated. . . . For all "Freon" or methyl units. . . . Only 1/2 oz. per lb. of refrigerant required. Get Thawzone at your wholesaler.



THAWZONE

THE LIQUID DRIER

**FLO-COLD
DRINKMASTER
DOUBLE-DUTY
BOTTLE COOLER**

Mfd. by

United Friguator Engrs.
Menominee, Mich.

Write for free 8" x 10" photos

Enlarged '53 Edition of ASHVE Guide Is Available; Chapter on Snow Melting Added

NEW YORK CITY—The 1953 edition of "The Heating, Ventilating and Air Conditioning Guide," published annually by The American Society of Heating and Ventilating Engineers, has just been issued. The 31st edition has a total of 1,560 pages and features many important changes and additions.

The Technical Data Section has been increased by 32 pages to a total of 1,096 pages—the largest to date. The Manufacturers' Catalog Data Section has also been enlarged to 432 pages.

Among the new and improved features of this volume are a new section on snow melting, completely rewritten chapters on electric heating and industrial exhaust systems, and a new chapter on water vapor and condensation in building construction. New information has also been added on industrial oil and gas burners, short chimneys, industrial degree-days, warm air system design, and unit heaters.

Heat losses from floor slabs and perimeter heating systems are covered in new material in the chapter on Heating Load.

Simplified cooling load calculations, discussions of radio-active contaminants, a revised friction chart for copper tubing, an enlarged list of codes and standards pertaining to heating, ventilating, and air conditioning, and many other improvements are important changes found in this edition.

The 51 chapters of The Guide are grouped in seven sections and include

such topics as: Fundamentals, Human Reactions, Heating and Cooling Loads, Combustion and Consumption of Fuels, Systems and Equipment, Special Systems, and Instruments and Codes.

The ASHVE Psychrometric is included separately in large size, 24 by 32 in. and is printed in two colors to facilitate the solution of problems involving air. This chart is based on the most widely accepted data on moist air tabulated in the chapter on Thermodynamics.

This edition was prepared by the Guide committee, comprised as follows: Chairman B. H. Jennings; P. R. Achenbach; D. B. Anderson; R. E. Cherne; W. S. Harris; W. E. Long; A. B. Newton; F. W. Nunlist, Jr.; C. D. Shields; ex-officio, I. W. Cotton, and technical secretary, Carl H. Flink.

Copies of the volume, priced at \$7.50 each, are available through American Society of Heating and Ventilating Engineers headquarters.

N. Y. Hotel Air Conditioning 125 More Rooms, Suites

NEW YORK CITY—Window-type room air conditioners are being installed in about 125 rooms and suites of the Ambassador hotel here, according to William E. Brown, manager. He said installation of the new units will bring to 250 the number of air conditioned rooms and suites in the hotel.



THIS NEW Westinghouse self-contained residential air conditioner, the RU-31, is capable of air conditioning an entire house. Because the motor-compressor unit is refrigerant cooled instead of the usual air cooled, the unit can be located in a closet, under a stairway, in an attic, or in other out-of-the-way places. It occupies only 4 sq. ft. of floor space and stands less than 5 ft. high.

Gibson Uses Giveaway Of 3 Cologne Fragrances To Attract Store Traffic

GREENVILLE, Mich. — A new traffic pulling item—three cologne fragrances attractively bottled in a special accordion package—will be used by Gibson dealers this spring and summer to induce prospects to watch demonstrations of Gibson appliances, Gregory V. Drumm, manager of advertising and sales promotion for Gibson Refrigerator Co. announced recently.

The perfume giveaway will be promoted in full page advertisements in Life magazine, newspaper advertisements, and retail tie-in displays, Drumm said.

He declared that consumer panels picked the Harriet Hubbard Ayer cologne as the best giveaway among six famous glamour packages.

"Gibson pre-tested the pulling power of the cologne package with local advertising in different markets," Drumm asserted. "In one newspaper ad test in Flint, Mich., over 1,200 people called at retail stores asking for the give-away. Dealers in the test have called it the hottest promotion idea they have seen since the war. Our tests resulted in substantial retail sales."

While Gibson is running the promotion, Harriet Hubbard Ayer will be showing full color advertisements on these same fragrances in magazines like Harper's Bazaar and Vogue.

Gibson, after months of negotiation, committed for the largest single order ever placed with the supplier for this class of merchandise, Drumm said.

Gibson absorbs part of the cost of the cologne and suggests that both distributors and dealers do the same. The prospect gets it free.

Gibson plans to use a dealer sales incentive contest to back the promotion.

Westinghouse A.C.--

(Concluded from Page 1, Column 4) manager for the division, said. "Combining their suggestions with the knowledge we have gained in 20 years of experience in the field, our engineers have perfected this new unit."

Because the motor-compressor unit of the new RU-31 is refrigerant-cooled instead of air-cooled, the unit can be located in a closet, under a stairway, in an attic, or in other out-of-the-way places, the company stated. It occupies 4 sq. ft. of floor space and stands less than 5 ft. high. Available with or without a fan for circulating the conditioned air, the RU Unitaire may be had in 3 or 5-hp.

In addition to its adaptability to almost any kind of home construction, the new air conditioner is also suitable for many commercial applications, Westinghouse said.

Kerotest--

(Concluded from Page 1, Column 4)

Last fall, Tube Turns, Inc. of Louisville, Ky., a metal fabricating company, acquired all the common stock of Kerotest and took over operation of the plant. Since then, Kerotest has been operated as an independent company under its own name, with officers and personnel being retained.

Questioned earlier regarding the present situation, a representative of Tube Turns said he had no comment.

For the past 30 years, Kerotest has been a manufacturer of brass and steel valves, and has been a leading manufacturer of refrigeration valves, fittings, and accessories ever since low-pressure refrigeration systems were first introduced.

Griffin Files Business Name

BUFFALO—A business name has been filed in the Erie County clerk's office for the Genesee Tire & Appliance Co., 1195 Genesee St., Buffalo, by Harold A. Griffin.

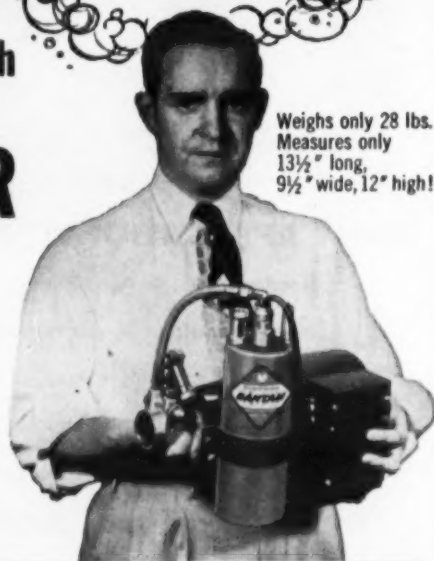


The little fighter with the high-capacity punch THE POWERFUL NEW TEMPRITE BANTAM-100 CARBONATOR

FULLY AUTOMATIC, delivers up to 100 gallons per hour of highly carbonated water. Use with any type cooling system!

EASY TO HANDLE; pump and motor, relay and carbonator assembled together for easiest possible installation!

EASY TO SELL because of high capacity operating efficiency! Soda fountains, roadside stands, restaurants, bars and taverns; they're all ready for Temprite's Bantam-100!



Weights only 28 lbs.
Measures only
13 1/2" long,
9 1/2" wide, 12" high!



TEMPRITE PRODUCTS CORP.
P.O. Box 72-A, East Maple Rd.
Birmingham, Michigan

☐ Send me data on the Temprite "Bantam 100" Carbonator.
☐ Ask your representative to call.

Name _____
Address _____ Zone _____
City _____ State _____

...IT'S NEW! The Utility Case



This new self-service case is the answer to many merchandising problems. It is built in two sizes, 7'6" and 9'6" long, 20 1/2" deep and 22" high. Can be used in front of meat cases, in shelving or mounted on legs.

This item has been profitable for refrigeration men. We suggest you write for information about our entire line. Your territory may be open.



Sectional walk-in refrigerator with exclusive "no-draft" Filter-Flo coil.



THE C. SCHMIDT COMPANY
JOHN & LIVINGSTON STS.
CINCINNATI 14, OHIO

Film Bows Worthington's New Compressor Line

HARRISON, N. J.—A 20-minute recorded sound film-strip program in color, which introduces Worthington Corp.'s new "J" compressor line, has been distributed to the company's district offices for presentation at air conditioning and refrigeration distributor sales meetings.

The J-line compressors are built in eight basic sizes and are for use with "Freon-12," "Freon-22," or ammonia.

Five major advancements in functional design are outlined in the film: improved internal manifolding; optimum speed; electric unloaders; rotary type oil pump; suction manifold and suction gas strainer.

In addition, the film points out the new "J" compressor's incorporation of previous major design features which have been retained in the new units, such as the Worthington feather valve; crankcase and cylinder body cast integrally; large size crankcase; wide-angle, leak-proof sight glass; lightweight automotive-type pistons; rotary type oil seal; and forged, rifle-drilled connecting rods.

The film also covers the testing operations of the compressor, points out that Worthington offers complete refrigeration systems (exclusive of duct work), including condensers, receivers, air handling units, and other auxiliary equipment, and notes well-known companies using Worthington equipment.

Punxsutawney Announces New Dealer Price Schedule

PUNXSUTAWNEY, Pa. — The Punxsutawney Co., manufacturer of "Beverage-Air" bottle coolers, club bars, and draft systems, has announced a new dealer price schedule that became effective April 1, 1953.

As the result of increased production efficiency and volume, the new schedule reflects a general decrease in list prices, although a few models have increased slightly. The larger bottle coolers have been reduced as much as \$66 on the BC94-R and BC94-S while some of the 48 in. and 63-in. bottle coolers remain at no change to a \$22 increase on the list price.

The above-mentioned price reductions are in keeping with the Punxsutawney Co.'s policy of passing on to the distributor any savings effected through plant efficiency or material costs.

All orders received between April 1 and April 18 are being invoiced at the lower of the old or new price schedules.

Auto Cooling Discussion Planned by Detroit ASRE

DETROIT—A discussion of automobile air conditioning from the "vehicle manufacturer's viewpoint" will be presented before the Detroit ASRE section at 8 p.m. Monday, May 4, by John T. Moren, project engineer of Chrysler Corp.'s Central Engineering Division. The meeting will be held at the Engineering Society of Detroit, 100 Farnsworth.

City Probes Storage of Meat, Fish, Ice Cream In One Case

JAMESTOWN, N. Y.—The City Health Board is investigating the practice of some frozen food retailers of storing frozen meat and fish in the same freezing cabinets with ice cream.

The matter came up at a recent meeting of the board and Dr. Donald D. Trantum, city health superintendent, said the practice could have a possible contaminating effect on ice cream if the latter melted and was re-frozen.

Ben-Hur Appoints Miller East Central District Mgr.

MILWAUKEE—R. C. Graves, Ben-Hur Mfg. Co. sales manager, has announced the appointment of George H. Miller as manager of Ben-Hur's east central sales district with headquarters at Cincinnati.

Miller, formerly district manager for Kelvinator at Houston, Texas, will direct sales of Ben-Hur farm and home freezers in southern Ohio, southern Indiana, and central Kentucky.



The customers were *always* there but, the case wasn't *until now!*

Everyone was aware that small "Ma and Pa" stores were anxious to get into self-service business.

The biggest thing holding them back was the high cost of equipment and the lack of space for larger cases. But, nobody had the real answer *UNTIL BALLY DESIGNED THE NEW SERVICOLD 60!*

Today, this little 60-inch long open style case is the winner for distributors, from coast to coast.

They're all talking about it. Servicold is a brand new money-maker for them. They sell it where they got "no" for an answer before. And you can do it, too.

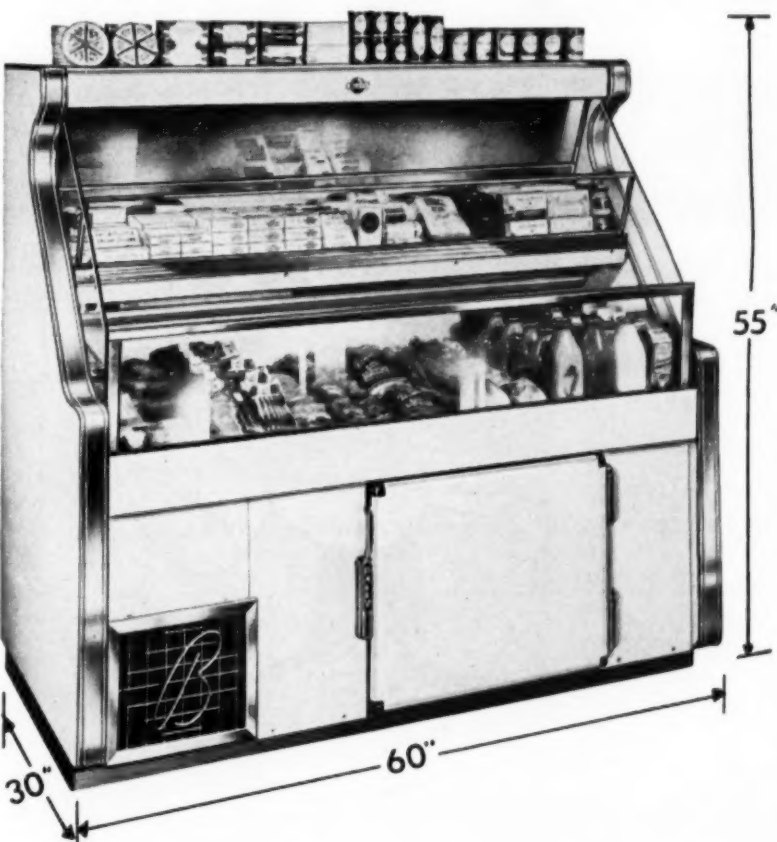
You get easy customer acceptance, because there is a genuine need for Bally Servicold.

You can install it fast. It goes through the narrowest doorway. Plug it in and it starts to refrigerate.

Takes only 60" by 30" floor space and fits in the smallest stores.

Servicold sells for a price that small business can afford and increases sales right from the start. It displays plenty of merchandise for easy self-service from big main shelf and refrigerated mezzanine shelf.

Refrigerates all items, dairy products, fruits and vegetables, meats, delicatessen, candy and baked goods. Copper-back mirror doubles appearance of display. There is a large refrigerated compartment in lower section for storage.



Servicold features low cost operation and there are no compressor worries with the powerful $\frac{1}{3}$ hp noise-free hermetic compressor that is built in.

Refrigerant flow is controlled by capillary tube. Everything your small store customer has ever hoped for in a self-service case is in Servicold 60.

Order a sample today. It's your first step toward extra business you never thought you could get.

Iron Prince
SALES MANAGER

BALLY SERVICOLD 60

WRITE TODAY FOR MORE DETAILS

BALLY CASE & COOLER CO.
Bally, Pennsylvania

Gentlemen:

Please rush full information about the new BALLY SERVICOLD 60.

NAME

COMPANY

ADDRESS

CITY

STATE

list price
\$990.00
f.o.b. Bally

SERVICOLD 60 IS AVAILABLE TO FRANCHISE
DEALERS OF OTHER LINES IN TERRITORIES
WHERE BALLY IS NOT BEING SOLD

BALLY CASE & COOLER COMPANY · BALLY, PENNSYLVANIA · TELEPHONE: BALLY 5-2311

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

"Thanks for telling me about it," he graved. "Unless it interferes with my son's schedule I'll watch it next week."

Sound Counsel

Marvin C. Laube, sales promotion and advertising manager of Sears, Roebuck & Co., believes that too many businessmen are fearful of the future.

This fellow, who has to be on the ball with regard to economic trends in order to keep his job, avers:

"There is no reason for fear. Newspapermen should tell their readers that America is economically strong, and that personal incomes and employment are at all time highs."

Lunde believes that the future of America rests in the hands of merchants on Main Streets throughout our country. Lawmakers in the Halls of Congress will take a back seat, he asserts, in coming years.

He points out that over-heavy inventories of consumers durable goods were liquidated late in 1952. Manu-

facturers have increased production schedules for 1953 as a result. Don't these facts add up to reasons for optimism?

He adds that 1953 will be a "highly competitive year." Newspaper advertising, he concludes, will play an important role in the stimulation of business in the consumers durable goods field. (May we insert the notation that AIR CONDITIONING & REFRIGERATION NEWS is our industry's only newspaper.)

Let's quote Mr. Lunde further: "People are earning more than ever before. The average family earns about \$5,000 yearly. But people are buying carefully."

"Newspapers must help the merchant to get his fair slice of the dollar."

"Another important factor in selling is the timing of advertising. Newspapers help you take advantage of this factor."

"Seasons must be considered, as well as occasions such as holidays and anniversary sales. Dealers must keep in mind that Easter, Labor Day, and Thanksgiving have a direct effect on the buying habits of the public."

"Spring buying starts with Easter shopping, fall buying starts after Labor Day, and Christmas shopping gets under way only after the Thanksgiving celebration."

"But advertising never stops—or shouldn't."

Like many another man in a position of influence, he studies good trade papers.

Business is good now—and newspapers (including specialized trade newspapers) will help make it better.

Gags of the Week

"Everybody is for tax reduction—and a new post office."—WALTER KIERNAN.

Men dream about pin-up girls. The latter look for men they can pin down.

Pity the Proofreader

Takes Bride After Fatal N. J. Accident.—Brockton Enterprise-Times.

Police To Retire Bottoms, 8 Others.—Louisville Times.

The Arboretum is a favorite fathering place for Ann Arbor students.—The Detroit Times.

Legend about a copy-reader working for the New York Daily News: "Could I use MOTHER instead of MOM on this head? MOTHER fits."

GIRL FAITHFUL TO HER JOHNNY.—Detroit News headline.

Roy S. Blank Dies Soon After Funeral.—Omaha World Herald.

Advertising Laffs

LOST: Small part male Shepherd dog.—Palos Verdes (Calif) News.

LOST: Parakeet, blue, in north end.—Terre Haute Tribune.

Wanted: Man with necessary equipment to spread manure.—Brantford (Ont.) Expositor.

Choice Chinese and American dishes hastily prepared.—Where magazine.

Wanted: A nurse for bottle baby between 35 and 40 years old.—Chicago Tribune.

What Won't They Think of Next?

There's a new type of insurance policy, we hear, which may become a forerunner of unusual protection. In principle, it could lead to coverage for alimony, being an old maid, or having too many children!

The Farm Bureau Insurance Co. of Ohio is issuing a marriage policy. A father may take out insurance on his baby daughter with this firm. The policy guarantees to pay all bills when she gets married. (That can be PLENTY).

The amount of protection the father wants he can choose for himself.

Should the daughter decide not to marry she receives an endowment 20 years after the policy goes into force.

Those Ohio insurers may have something there.

Servel-New York Names Manne Manager of Wonderbar Sales

NEW YORK CITY—Arthur Manne has been appointed sales manager of the Wonderbar Div. of Servel-New York Corp., it was announced by Paul A. Hilton, manager of this distributing subsidiary of Servel, Inc. in the New York metropolitan area.

Manne will supervise sales of the new Servel portable refrigerator in the New York, Brooklyn, Bronx, Queens, Nassau, and Suffolk areas. Formerly he was with Columbia Pictures in sales. He was graduated from New York university where he studied business administration.

Admiral First Quarter Sales Exceed \$67 Million

CHICAGO—Admiral Corp.'s sales for the first quarter of 1953 exceeded \$67,000,000, while net earnings will be over 60% above the comparable period in 1952, according to preliminary figures. Both sales and earnings are the second highest in company history. More than 10,000 employees—a record high—currently are on the payroll.

At the annual stockholders' meeting, Frank H. Uriell, vice president and general counsel, presiding in the absence of President Ross D. Siragusa from the country, declared that the second quarter also is off to a good start and said that sales for the first six months of the year will set a new record high for the company.

He said the outlook for the second half is uncertain.

1st Quarter Retail Sales Of G-E Major Appliances Up 10% over Year Ago

LOUISVILLE, Ky.—Retail sales of General Electric major appliances were up about 10% for the first quarter of 1953 from the same period of last year, the company reported.

Clarence H. Linder, G-E vice president and general manager of the Major Appliance Div., said in a quarterly statement that retail sales of refrigerators, heaviest selling item in the line, were up about 3%.

Still greater gains were reported in March as compared with March of 1952, with retail sales for the entire line up about 20% and those of refrigerators up about 6%.

Linder forecasts that retail sales for the year well might approach a level 20% ahead of 1952 if present consumer buying trends continue. He noted that inventories at all levels of distribution are lower than at the same time last year, and that the total inventory—factory, distributor, and retail—was about 75% of last year as of April 1.

Automatic clothes dryers and washers paced the "gainers" at the retail level during the quarter with increases of 40 to 50% from the like 1952 period. This bears out the belief that these two items will be the fastest growing appliances in the 1953 line, the G-E executive reported.

Other gainers during the quarter from last year included wringer washers, home food freezers, and ranges. Down from about 3 to 10% during the first quarter were disposers, water heaters, dishwashers.

1953 "BLUE BOOK"
The Nationally Recognized
ILLUSTRATED
Book of Refrigerator
Trade-in Values
One trade-in
based on this
BLUE BOOK
will more than
pay for the book!
order your
copy today

\$5.00 each
IN QUANTITIES
25 OR MORE
\$3.20

**NATIONAL REFRIGERATOR
MARKET REPORT, INC.**
DEPT. AC-1 BOX 606
LOS ANGELES 25, CALIFORNIA

Gags of the Week

"Everybody is for tax reduction—and a new post office."—WALTER KIERNAN.

Men dream about pin-up girls. The latter look for men they can pin down.

Pity the Proofreader

Takes Bride After Fatal N. J. Accident.—Brockton Enterprise-Times.

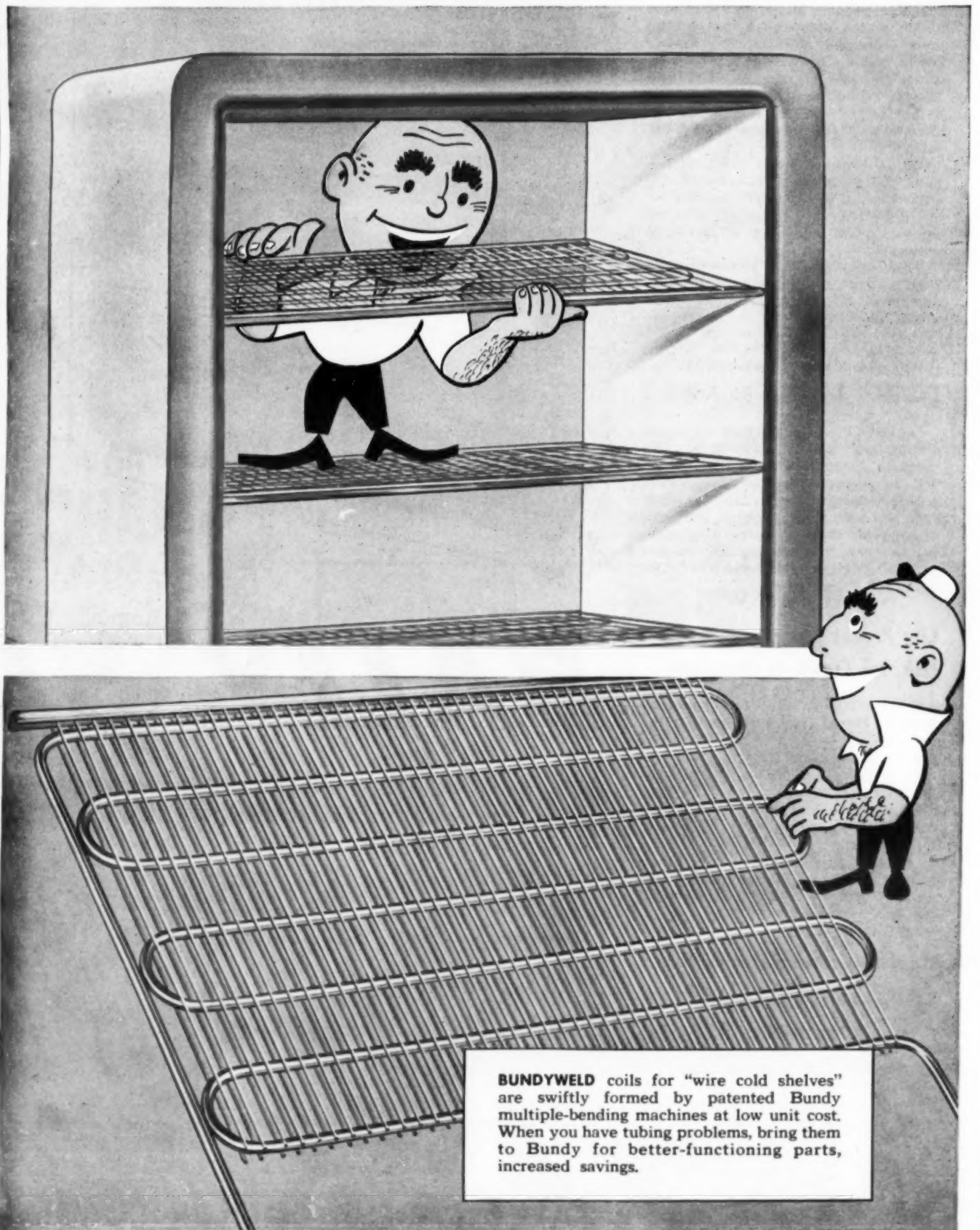
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GIRL FAITHFUL TO HER JOHNNY.—Detroit News headline.

Bundyweld—first choice



BUNDYWELD coils for "wire cold shelves" are swiftly formed by patented Bundy multiple-bending machines at low unit cost. When you have tubing problems, bring them to Bundy for better-functioning parts, increased savings.

Built TO LAST A LIFETIME



DISPENSER AND STORAGE COOLER—AVAILABLE IN 7 MODELS

**The FAMOUS P-H
DRY BEVERAGE COOLERS**

CHOICE OF PORCELAIN OR
STAINLESS STEEL EXTERIORS

For fast, economical, uniform cooling you can't beat the new P-H Dry Beverage Cooler. In over 20 years of field testing the patented P-H forced updraft cooling system has been proved superior to any other type. Actually built to last a "Lifetime" the exteriors of these attractive streamlined coolers are finished in black porcelain with stainless steel working surfaces . . . also available with stainless steel exteriors. Your choice of 50", 6", 8" or 10' models with bar tops if desired . . . both remote and self contained.

SEE YOUR NEAREST P-H DEALER . . . OR Write -

PUFFER-HUBBARD MFG. CO.
GRAND HAVEN, MICHIGAN
New York Export Office—Puffer-Hubbard International
440 Lafayette St., New York City—Cable Address "MANREFSUP"

REACH-IN, PASS-THRU and FLORIST CABINETS—
DOUGH RETARDERS—DAIRY-DELICATESSEN
AND DISPLAY CASES—WALK-IN COOLERS



ROOM COOLER NEWS

Using Room Conditioners All Year

Many Advantages, Few Problems Result from Getting Fuller Use from What Used To Be 'Hot Weather' Item

By Carl F. Zauner, Service Manager,
Remington Air Conditioning Div. of Remington Corp.

Long considered a "hot weather" item—something that could be sold and used only when the buyer was experiencing the discomforts of excessive heat—the room air conditioner for many years followed the pattern of installation in the hot weather, removal and storage during the cold season, while awaiting another summer's heat wave.

Now, however, through the combined efforts of manufacturers, distributors, and dealers, the consumer is realizing that there are many health and comfort benefits to be obtained from a room air conditioner in addition to providing comfort cooling in hot weather. The addition of a heating function in many models will also tend to lengthen the months of use for the room air conditioner and strengthen the customer's desire to leave a window-type unit in the year-round.

This year-round use, particularly of window models, raises the questions with many installation and service or-

ganizations, "What should be done, particularly in the more severe climates, to assure satisfactory operation the year-round? Should any maintenance of a preventative nature be performed on window units left in year-round?"

Remington's answer to such inquiries has been to encourage year-round installation and we have experienced no marked difficulty from such a recommendation. The Remington unit is so designed and constructed as to resist the elements. With proper installation—except in the most severe climatic conditions—no special attention other than the normal yearly inspection, oiling, and filter replacement, should be necessary.

CONSOLE UNITS ARE IDEAL FOR 'YEAR-ROUND' USE

Consoles in particular are ideal year-round units since they have no projection beyond the window line. In a console unit no part is exposed

to the outside weather. In fact, with Remington consoles the standard double-hung window can be closed without disturbing the unit. When it is desirable to operate the unit the window can be opened again. However, it is unnecessary to close a window with a console installation even in extremely cold weather, if the installation is properly made.

COLD WILL NOT HARM WELDED HERMETIC SYSTEM

With window units cold weather will in no way be injurious to the welded hermetic system of the unit. The design of a window unit is such as to prevent the weather from getting in. As far as room comfort is concerned if the unit is properly sealed and installed, there should be no disagreeable drafts when the unit is left in the window during the winter months.

In our opinion the only disadvantages of leaving the unit in the window year around are: the possibility of drafts due not to the unit but to a faulty installation, the slight possibility of rusting which is always prevalent in any piece of mechanical equipment exposed to the weather, and the possibility that the unit might be an attractive roosting spot for birds during the winter months or a convenient ledge for snow to pile upon, melt, and run down the face of the building.

The rusting objection should not be too serious if the unit is inspected in the spring months and any spots that might possibly show, touched up with proper paint. The other objections are easily overcome with a bit of ingenuity on the part of the installer.

Outweighing these are the many

Decorator Model Gets Public Demonstration



MIAMI HOME SHOW VISITORS get a demonstration of how International Harvester's Decorator model window air conditioner can be covered to match the drapes, rugs, or other fabrics used in the room. These units come in four sizes ranging from ½ hp. to 1 hp. The display was sponsored by Russ and Dorothy Gray, International Harvester distributor in Miami.

advantages of leaving the window unit in year-round. Ignoring the cooling desired during the hot months, a window unit can increase comforts by freshening the air in a room by exhausting smoke or foul odors without the necessity of opening any doors or windows.

RECIRCULATION AIDS IN HEATING

Fresh filtered air may be brought into the room all year-round with the windows kept tightly closed. At any time of the year room air will be freshened through recirculation and filtering. Recirculation of room air through the use of the window unit will assure a more uniform heat even into the farthest corners of the room.

We know of window units that have worked particularly well where radiators or other heating apparatus have been located directly below the unit and this section of the room a noted "hot spot." By turning the room air conditioner on "fan" the heat which normally pocketed in this area was evenly circulated throughout the room for added comfort.

In office and apartment installations, where it is extremely difficult to control the temperature of a room heated from a central source, the air conditioner can easily be used on "ventilation" to bring in fresh cool outdoor air, or on "cooling" if desired to combat an excessive heat supply. Windows can remain closed and all dirt and noise kept from filtering into the room.

REMOVAL, INSTALLATION COSTS ELIMINATED

An added advantage of the year-round use of the room air conditioner is that the owner doesn't have the additional cost of removing and re-installing the unit each fall and spring. There is no storage problem. In the spring it is possible to re-condition, oil, and, if necessary, paint the outer casing or any external part at far less than the cost of removing and re-installing the unit.

The average service or installation organization should not hesitate to recommend that they be left in year-round so that the owner may enjoy the many benefits of true air conditioning—all year long.

Opens New Showrooms

JOHNSTOWN, Pa. — Edward W. Livingston & Son, heating and air conditioning contractor, has opened new display rooms at 409 Horner St.

Mitchell Appoints 5 More Room Cooler Distributors

CHICAGO—Franchises to handle Mitchell window-type room air conditioners have been awarded to five distributors, it was announced by E. A. Tracey of the Air Conditioning Div.

The new distributors are: Hoffman Electric Supply Co., Baltimore; Motor Radio Co., Inc., Kansas City, Mo.; McGowan Electric Supply Co., Tallahassee, Fla.; Nash Kelvinator Sales Corp., Detroit; and Great Lakes Electric Supply Co., Detroit.

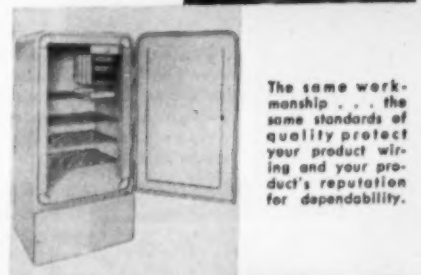
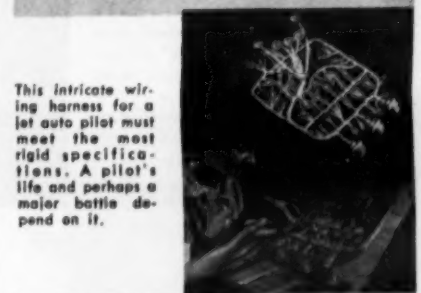
IT MAY BE
"Lovely To Look At"

But If The Wiring
Fails . . . So Does Your
Reputation

**Be Sure . . . Demand
UNILECTRIC Wiring Systems
in the products you sell**

For over 10 years UNILECTRIC has been "Wiring Headquarters" for the nation's electrical industry. Over 130 leading manufacturers of refrigeration and other electrical appliances protect their products with UNILECTRIC Wiring Systems. Be sure of dependable performance in the products you sell by demanding UNILECTRIC Wiring Systems.

**There is only ONE
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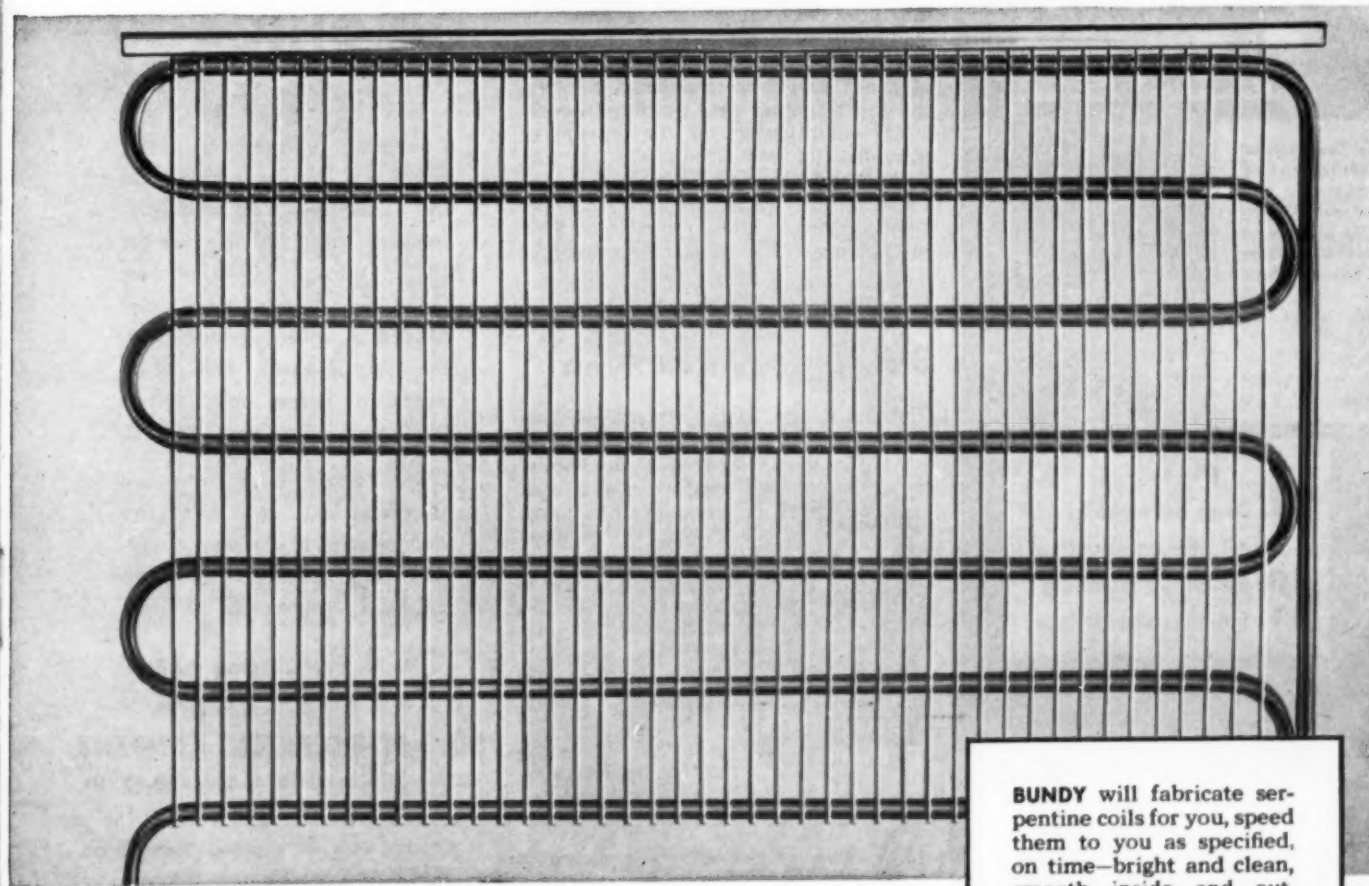
for new cold shelves for upright freezers

The growing trend to upright freezers calls for new refrigeration parts, new designs—and Bundyweld Tubing.

Since planning began on these new freezers, refrigeration men have specified Bundyweld for cold shelves. From past experience they know it's dependable. They know it's leakproof,

thinner, stronger tubing with high thermal conductivity, great bursting strength.

More, skilled Bundy engineers are on hand to help solve troublesome tubing problems, and Bundy production facilities are geared to mass-produce tubing parts at low cost. Write to **Bundy Tubing Company, Detroit 14, Michigan.**



BUNDY will fabricate serpentine coils for you, speed them to you as specified, on time—bright and clean, smooth inside and out, ready for plating and other finishing operations. For fabrication in your plant, Bundy will ship straight lengths or economical, easily handled coils. In both cases, you can count on Bundy skills to help get better parts at lower cost.

Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

PeeKay...
the Plasti-Kote
"Spray" says:

**A little spray
goes a l-o-n-g way!**

**PLASTI-KOTE
SELF SPRAY
FINISHES**

Solve your
touch-up problems!

Paint and Pressure in
one container. Ideal for
touch-up and re-finishing.

PLASTI-KOTE, INC.
425 Lakeside N.W. Cleveland 13, Ohio

Commercial Refrigeration

Jordan Televises Dealer Showing Of Commercial and Home Freezers

During on April 11 special televised dealer showing of their new line of commercial and home freezers in Philadelphia, Jordan Refrigerator Co. executives Frank and Harry Fogel are shown receiving citation award presented by General Hugh B. Hester, executive vice president of the Chamber of Commerce of Greater Philadelphia. Shown left to right are Frank Fogel, Jordan president; General Hester, and Harry Fogel, Jordan vice president in charge of sales. The chamber award cited the two men for their "merchandising foresight" and for being the first manufacturers of a nationally distributed line to recognize Philadelphia as a major market by holding an initial showing here. The half-hour televised dealer showing over WCAU-TV at 9 p.m. marked another Jordan "first,"—the first time an advanced dealer showing has been opened to the public through the medium of television. More than 200 Jordan dealers and salesmen were present in the WCAU-TV studio-auditorium. Showcase for the presentation of the complete line of commercial and home freezers manufactured by Jordan was a baseball program arranged by Bill Campbell, WCAU sports director, welcoming home the two Philadelphia baseball teams. Jean Corbett, known as Aunt Molly to WCAU-TV viewers demonstrated the Jordan freezers. Highlight of the freezer presentation was the new Jordan Gold Tone upright, the "glamour" freezer of the year.



Some Interesting Refinements

Canopy over Refrigerated Cabinets In Supermarket Cuts Interference from Draft

WICHITA, Kans.—Some interesting refinements in supermarket design are found in the new Safeway store now operating at George Washington and Hillside Sts. here.

The market is completely air conditioned and 100% self-service, and its equipment was installed by Hill Electric Co., commercial contracting firm here headed by Nihat Genghiz.

One of the first things that strikes the visitor as somewhat different about the store is the canopy above the open cases. This is placed about 7 ft. above the floor and extends out from the wall approximately 30 in. Front edge of the canopy has illuminated signs indicating the contents of the cases directly beneath—"frozen foods," "fresh meats," etc.

PRIME PURPOSE OF CANOPY

Prime purpose of the canopy, however, is to eliminate or at least minimize drafts from interfering with the operation of the open cases. Even in a properly air conditioned supermarket such as this one, a slight draft across the top of an open case makes a decided reduction in its refrigerating efficiency.

This is a large market and has considerable open equipment. Inside length of the store is 180 ft. L-shaped, it's 100 ft. wide in the front section; about 60 ft. wide for the remaining two-thirds of the store. Outside of

the building is roughly rectangular, however, with the other space beside the narrow part of the "L" being devoted to a meat-cutting and wrapping room and a produce cooler.

20 REMOTE CONDENSING UNITS

As common with the modern "super," there's considerable refrigeration in the store. In addition to the 50-ton air conditioning system, there are 20 remote condensing units ranging in size from ¾ to 5-hp. providing refrigeration for cases and coolers. A few self-contained cases are also employed.

There are five 12-ft and two 8-ft. refrigerated open cases handling produce; six 12-ft. cases for meats; three 12-ft. and two 8-ft. frozen food cases; two 12's and two 8's for dairy products. All these cases are Tyler. In addition, there are two 8-ft. open Weber ice cream cabinets that are self-contained.

Other Tyler equipment in the market includes three large walk-ins for frozen foods, dairy goods, and meats, respectively.

MEAT CASES CAN BE SERVICED FROM REAR

The large meat-cutting room directly behind the line-up of open meat cases permits the cases to be serviced from the rear. This meat room is held to a temperature of 55° F. by four 688HR Betz half-round coils connected to a 3-hp. Curtis condensing unit.

Other features of this room include a conveyor rack installed at a slight angle so that meat which is cut at one end of the room can be placed on trays and rolled by gravity down to the wrapping department at the other end.

Here hot sealing plates have been installed flush with the surface of the wrapping tables to speed the wrapping and labeling process.

Large produce storage room in the market is also maintained at 55° F. by five 867HR Betz half-round unit coolers. Here also are two Hussmann walk-ins for produce, one holding a relative humidity between 98 and 100%, the other an r.h. of approximately 85%.

MACHINERY ROOM IS AT MEZZANINE LEVEL

Machinery room housing the refrigeration and air conditioning equipment is at the mezzanine level. In it are 18 Frigidaire units ranging from ¾ to 3-hp. handling all cases except the self-contained models. These 18 machines are piped to a Kennard cooling tower. A second Kennard tower in the machine room takes care of the 3 and 5-hp. machines serving the meat-cutting and produce rooms.

Air conditioning for the market is provided by two 25-hp. Curtis machines connected to a Kennard air-handling unit and a Kennard evaporative condenser which is split in two circuits—one for each compressor.

Leo Saettele To Represent Bally In Northwest Area

BALLY, Pa. Appointment of Leo G. Saettele as factory sales representative in the north-eastern states was announced by Leon Prince, general sales manager of the Bally Case & Cooler Co. here.

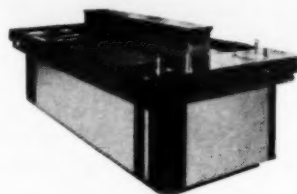
Saettele has been with the sales department of the company since 1948. In his new position he will direct an extensive expansion program in his territory.

Bowman To Move To Larger Quarters by Mid-June

RICHMOND, Va.—Louis O. Bowman, Inc., wholesale distributor of air conditioning equipment and home appliances, has purchased the building at 101-07 S. 14th St. here. The firm, currently located at Tenth and Cary Sts., will occupy its new quarters in mid-June.

Bowman said the property will give his firm about 17,000 additional sq. ft. of floor space.

REFRIGERATION At Its Best!



WITH

DOLE VACUUM COLD PLATES



INSTALLED AT THE FAMOUS

SVITHIOD SINGING CLUB OF CHICAGO

Constant, uniform low temperatures are maintained on this specially designed dispensing table by the use of DOLE Vacuum Cold Plates. Cold food preparations, placed in direct contact with the flat, intensely cold plate surfaces, are kept fresh and palatable until served.

DOLE Vacuum Cold Plates are available in lengths and widths to fit any standard or special dispensing cabinets, tables, or shelves.

Write For Catalog AAE!

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44 Elgin Street, Brantford, Ontario

For All Refrigeration Purposes

DOLE
VACUUM COLD PLATES

11 reasons why Everfrost IS YOUR OUTSTANDING FOUNTAIN VALUE



1. Each Everfrost Bobtail and creamer unit includes a complete, conveniently located running water dipper well plus a refuse chute with a removable container.



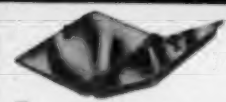
2. Extra thick walled, black glazed jars are standard equipment on Everfrost units. Deep-drawn stainless steel syrup and crushed fruit jars are available at a slight extra cost.



3. Syrup pumps are all stainless steel, "New York" style which can be easily disassembled for fast, thorough cleaning. Everfrost pumps meet the most strict health law requirements.



4. The Everfrost Refrigerated Carbonator and Water Cooler supplies a greater volume of below 38° carbonated and sweet water. The higher gas absorption of Everfrost means better drinks.



5. Constructed entirely of stainless steel, all compartment lids are hermetically sealed, moisture proof and designed to eliminate drippage into the ice cream compartment.



6. Designed and developed by Everfrost engineering specifically for soda fountain and drink dispensers, the Series 90 Water Pump provides years of dependable economical service.



7. Three temperature control, a feature of all Everfrost creamer units, assures proper temperatures in the 1) ice cream compartment 2) syrup and storage compartment 3) carbonator and water cooler. Two temperature control is standard on Bobtail units.

plus...

- 8.** Deep-drawn sinks
- 9.** All steel construction
- 10.** Simplified plumbing
- 11.** Stainless steel linings

There is an Everfrost fountain or drink dispensing unit designed for every size and type of installation... each with the plus features that mean better performance, finer refreshment, greater customer satisfaction. Write today for free literature on the full line of Everfrost equipment.

EVERFROST SALES, INC.

Soda Fountain, Luncheonette and Drink Dispensing Equipment
14815 S. BROADWAY
GARDENA, CALIFORNIA



Makes a Cool Picture

THERE IS nothing rare about a smiling bride—but this lovely "bride" is pictured between wedding poses at the Victor Keppler Studios in New York. She is getting a cool, refreshing drink from an Oasis water cooler. Victor Keppler, noted photographic illustrator says, "it is important to provide cool drinking water in my business. It helps the models and technical aides to keep cool, calm, and refreshed during a photographic job."

Cuba May Begin Frozen Food Processing; Air Conditioning In Wide Use

HARRISON, N. J.—It seems certain that Cuba will soon venture into a new field, frozen foods, according to Horace E. Wood, manager of refrigeration and air conditioning exports of Worthington Corp.

While touring Latin America, Wood spent several days in Havana and expressed his opinions after having the opportunity to study the local market and sources of supply.

He reported that there are possibilities of industrializing several items such as pine preserves, concentrated juice of the same fruit, lobster tails, concentrated orange juice, meats, fish, and some vegetables. There are other typical Cuban products that would have a great demand in the world market if they could be processed, concentrated, and frozen, he said.

In reference to fish, Wood pointed out the advantages that modern freezing plants strategically located in the Cuban territory would offer: They would guarantee to the customers a better round-the-year delivery protecting them against the dangers of tainted food.

Wood also mentioned his amazement at the enormous increase of air conditioning and refrigeration in Cuba, where annual investments amount roughly to six million dollars. He emphasized the fact that this increase has taken place not only in the industrial fields but also in private homes.

Walk-In Unit In Center of Hospital Kitchen Cuts Food Waste, Unnecessary Steps, Labor

WACO, Texas—Locating a four-compartment walk-in refrigerator in the center of the new kitchen of Providence hospital here has eliminated needless steps and labor, thereby speeding up food preparation.

The all-stainless steel and tile kitchen is part of a 125-bed annex completed last fall. Replacing the old kitchen on the second floor of the original building, the new food service area is designed for serving 1,100 meals a day, in addition to preparation of hot foods for a student nurses' cafeteria and a short-order grill, both on the same floor.

Because Mrs. A. Jordan, dietician, found that the principal source of waste motion in kitchens had been the remote location of refrigerated storage space, the new kitchen is so planned that all major preparation departments are located around the all-tile walk-in box.

The refrigerator is surrounded by an all-stainless steel meat preparation room on one side, a vegetable preparation room on another, and dairy foods and bakery on the remaining two sides.

The walk-in is divided into a 6-ft. by 8-ft. unit for dairy foods and other perishables; another box of the same size for produce, fruit, and allied food items; and a third unit, measuring 12 ft. by 8 ft. for meats. In the direct center, accessible from any of the remaining three, is a 4-ft. by 6-ft. low temperature unit for

sharp-freezing leftovers and storing large quantities of frozen foods.

Each unit is refrigerated to the proper temperature by an overhead Carrier dome-type blower unit. All four are served by a single 3-hp. condensing unit, located in a nearby utility room.

Since all preparation of salads, meats, dairy products, or baked goods is carried out within five feet of the refrigerator entrance, with the door arranged for minimum steps, production has been considerably increased with less "lost motion" to contend with, according to Mrs. Jordan.

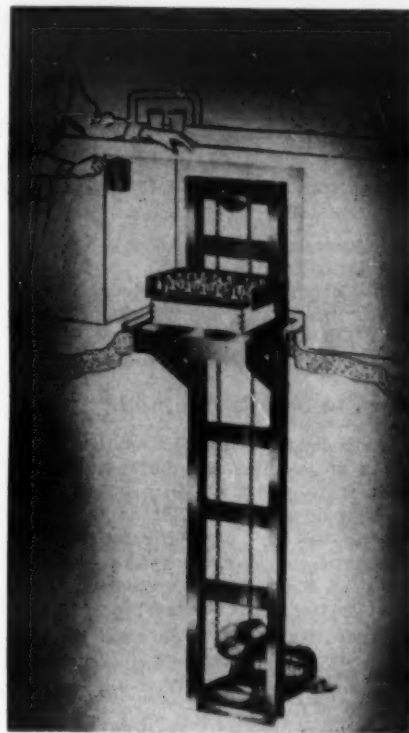
The design has also made it possible to cut down on the amount of smaller refrigeration units, normally found in a kitchen of such a size. Two custom-built, six-door reach-ins, all in stainless steel, are the only other refrigerators used. One serves as a chef's refrigerator and the other is in the dietary kitchen.

At the end of a corridor is a garbage refrigerator kept at 25° F.

Chicago ASRE To Hold Golf Tournament June 18

CHICAGO—The Chicago section of the American Society of Refrigerating Engineers will hold its annual golf tournament at Itasca Country Club on Thursday, June 18.

Reservations are being accepted by Edwin C. Ward, chairman, golf committee, 1151 W. Eddy St., Chicago 13.



Dumbwaiter Raises Cases From Basement to 1st Floor

CINCINNATI—A case size dumbwaiter for bringing cases up from the basement to the first floor in restaurants, taverns, or markets has been introduced by the Hi-Lite Corp. here.

Called the "Hi-Lite Upper-Down," it is compact enough to fit behind the bar, counter, or checkout stand. It can be installed to stop even with

the floor or at a working height above the floor. No building changes, reinforcing, or shafts are needed, the manufacturer says.

Model UP1101 is made standard, with the exception of the rail length, to fit all installations. The entire dumbwaiter is constructed of heavy gauge steel, with ball or roller bearings at all friction points. Heavy duty chain and sprockets lift the load. Control switch is usually mounted at the bar.

Speed is approximately 8 ft. in 10 seconds. Capacity is 125 lbs. A ½-hp. motor is used. Self-opening doors are provided at the floor opening.

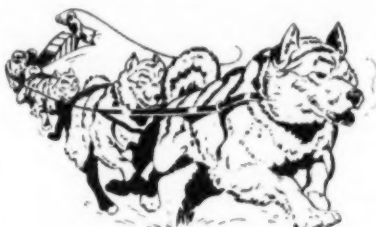
Cleveland Freezer Plan Aids Gov't Appeal To Eat More Beef

CLEVELAND—Better Living, Inc., National Food Savings Plan, which lays claim to being the most active food plan advertiser in the Cleveland and northern Ohio area, recently collaborated with the U. S. Department of Agriculture in the department's effort to boost the consumption of beef.

Better Living gave up part of its commercial time on its TV show to W. P. Patterson of the production and marketing administration. Patterson made an appeal which was aided by a specially prepared display of choice meats.

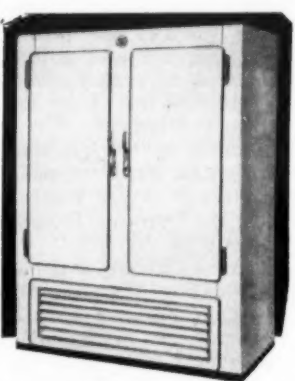
Better Living, Inc.'s president, Harold H. Goldberg, reported that both his organization and TV station WEWS received many favorable comments on Patterson's message . . . and on the meat.

Better Living is a dealer for Jordon and Victor freezers.



LA CROSSE the leader GIVES YOU MORE

of everything your customers want most in commercial refrigeration equipment!!



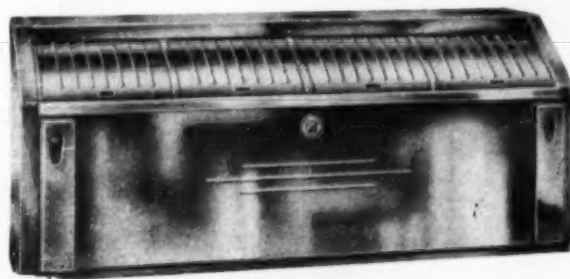
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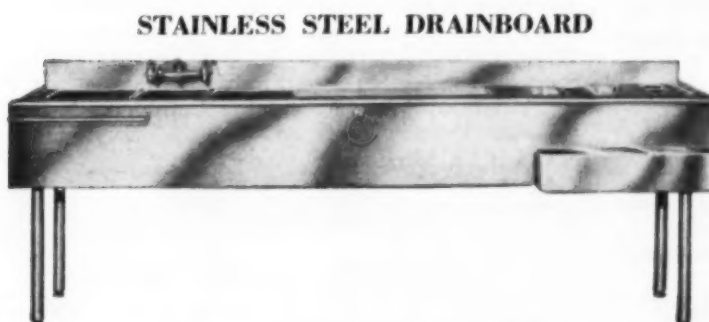
ECONOMY PRECOOLER



SUPREME BOTTLE COOLER



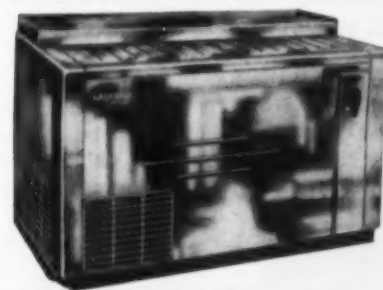
LA CROSSE BOTTLE COOLER



STAINLESS STEEL DRAINBOARD



BLUEBIRD BOTTLE COOLER

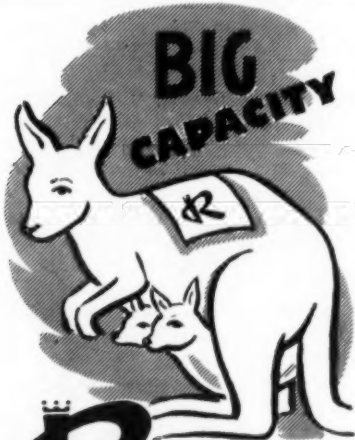


LA CROSSE ICE CUBE MAKER

DIRECT DRAW

FIVE YEAR WARRANTY

A new example of La Crosse Leadership . . . a 5 year Optional Warranty Plan on sealed condensing units installed in LA CROSSE equipment at the factory. Now you can offer this additional protection to your customers at an exceptionally small cost.



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CHILL CHEST
FOOD FREEZERS

● Cash in on the big profits, too! Join the fast growing family of successful Revco Dealers. Act today . . . don't delay!

Faster Freezing

ALUMINUM
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CONSTRUCTION
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National Restaurant Convention
and Exposition May 11-15—
Navy Pier, Chicago, Illinois

Shipping Refrigerated Produce

Purdue Conference Studies Means of Transporting Fresh and Frozen Products Via Mechanically Refrigerated Railroad Cars

WEST LAFAYETTE, Ind. — Since the first mechanically refrigerated railroad car was placed in service in 1949, this type of car has carried more than 4,700 loads, including frozen citrus juice concentrates, and has operated a total of approximately 7,000,000 loaded car miles—or about 280 loaded trips around the world—without loss to any shipments.

"We consider this a remarkable record for the short average period the cars have been in service," declared E. J. Keeley, assistant general superintendent of four combined refrigerated express companies.

He cited it at a recent short course on transportation losses of perishables conducted by Purdue university.

Keeley was one of three speakers who discussed the role of refrigeration in reducing such losses. As part of his talk, he gave a brief review of the development of the mechanically refrigerated railway car and its present role in the transportation of perishables.

Prof. C. L. Burkholder, assistant chief of Purdue's department of horticulture, discussed hydro-cooling of peaches, and A. W. Tucker, representing the Vacuum Cooling Co. of San Francisco, described the vacuum cooling process for head lettuce.

Burkholder said that the hydro-cooling of peaches takes the form of lowering the flesh temperature of harvested peaches by flooding the

packed bushel with water held at a temperature near 32° F.

He declared that stericoolers, as the hydro-cooling equipment is called, are increasing in popularity in a number of peach producing areas.

Hydro-Cooling Method

With hydro-cooling, flesh temperatures of peaches can be reduced approximately 40° F. in 15 minutes. This is 60 times as fast as the same amount of heat can be removed in a standard cold storage refrigerator. It took 48 hours to remove that much heat in the old-style refrigerator car.

Hydro-cooling reduces natural ripening and makes possible harvesting at a more mature stage to get improved quality.

However, Prof. Burkholder declared, there has been a tendency to date to pick the fruit at the same stage of maturity as in the past. This has resulted in shipments reaching the consumer in a more immature condition than when the peaches were allowed to mature slowly enroute.

Vacuum Cooling Process

Tucker reported that the idea of vacuum cooling lettuce was first developed in late 1948. But it has grown so fast that in 1952, more than 10,000 carloads of lettuce were cooled by that method.

"The next five years will see

vacuum cooled lettuce and other perishables offered nationally in pre-packaged form, thus reducing losses to a negligible factor and at the same time revolutionizing the distribution of these products, as well as the production," Tucker predicted.

To date, there are nine vacuum cooling plants, all located in California. Five of them have a capacity of 50 to 60 carloads of lettuce per day and four have a capacity of 30 to 40 carloads of lettuce per day.

Basic engineering principle is based on the fact that water will boil at 32° F. in 29.74 in. of vacuum.

"Naturally, it requires heat to boil water at any temperature," Tucker explained. "In our case, when we boil water at 32° F. in 29.74 in. of vacuum, the heat comes out of the lettuce, thereby reducing the lettuce to 32° F."

"Field trucks deliver the lettuce to our plants already palletized. We lift the pallets from the trucks, place the pallets on a 50-ft. cart or dolly, and push the dolly into the 50 ft. vacuum tube, which holds 384 two-dozen cartons, or 192 four-dozen crates, a little more than half a carload.

"The doors to the tubes are closed. A high pressure steam jet system commences evacuating the air from the tube, which takes about seven minutes. When a vacuum of about 28 in. is reached, a high pressure

Commercial Refrigeration

booster jet is brought into play and commences to bring the vacuum down from about 28 in. to about 29.8 in.

"This actually reduces the boiling point of water below 32° F. However, when the lettuce reaches 32° F. the vacuum is shut off. Our temperature indications come from recording thermometer bulbs inserted in the heart of the lettuce carton or crate at three different places. With average field lettuce temperatures of 70° F., the complete cooling time from 70° F. to 32° F. is about 22 minutes per tube.

"Upon completion of this cycle, the doors are opened, the 50 ft. dolly is pulled out and placed alongside a conveyor. Set-off boys place the cool lettuce on the conveyor and it travels up into the cars where it is loaded. This completes the service of cooling and shipping as offered by Vacuum Cooling Co.

Fibre-board Carton Used for Lettuce

"In the fall of 1950, the two-dozen fibre-board carton was brought into the picture. . . . Methods were devised to pack and stitch close the carton in the fields. The carton introduced advantages to the shipper, such as a lighter package, a less costly package, and a reduction of production cost. . . .

"Market reception of the carton was almost phenomenal. Here apparently was a package made to order for better merchandising of this product. At the beginning of this year, about 40% of the carload movement of lettuce east was vacuum cooled, and about 90% of this was in cartons.

"A question comes up as to how vacuum cooled lettuce has prevented or reduced losses to the shipper in transit and during distribution. First of all, the lettuce is literally cooled to the heart. It is placed in the standard fan car at 32° F. or possibly 33° F. with standard refrigeration.

"There is a temperature differential of about ½° F. between the outer surface and the heart of the lettuce. There is no wet top ice and no wet ice pack used. It seems reasonable to assume that considerable loss and deterioration are prevented."

Keeley explained to his audience that he represented Fruit Growers Express Co., Western Fruit Express Co., Burlington Refrigerator Express Co., and National Car Co.

These four firms operate a pooled fleet of approximately 21,000 refrigerator cars. They are associated under one headquarters management in Washington, D. C. and have contracts with 71 railroads to furnish their refrigerator car requirements and provide perishable protective service. They operate in some 40 states and load approximately 350,000 refrigerator cars annually.

Mechanical refrigerated cars, however, number only 175 in service with 132 additional on order, Keeley said.

2 Cooling Systems Used

"Of the total mechanical cars now in service and to be built, 296 will be equipped with the diesel-electric system developed by Frigidaire Div. of General Motors Corp. in cooperation with Fruit Growers Express Co. and the balance of 11 now in service are equipped with a gasoline engine propelled system developed by the U. S. Thermo Control Co. of Minneapolis, known as "Thermo-King".

Keeley noted that providing these mechanical refrigerator cars on a large scale operational basis was the result of exhaustive laboratory and road tests, made between 1948 and 1950, of 16 special refrigerator cars of various descriptions, using various types of systems. Each system was given a complete trial and the Frigidaire and Thermo-King systems were selected for use by Keeley's organization.

"Research work is constantly going on," Keeley said, "and the Frigidaire mechanical refrigerating units applied to cars now under construction have many mechanical improvements over the first units.

"The major improvements include two 5-hp. sealed compressors with direct drives, eliminating use of belts. Each compressor operates independently of the other under a single temperature control.

"The units will produce refrigeration or heat, maintaining inside temperature according to thermostat setting regardless of outside temperature.

"For example, with thermostat set at 43 to 45° F., refrigeration will be supplied when car temperatures rise above 45° F. and heat supplied when car temperatures fall below 43° F. The units in the newest cars are designed to maintain car temperature as low as 0° F. and as high as 70° F.

All-Purpose Car Needed

"Mechanical refrigerator cars were provided primarily to meet the request of shippers of frozen foods for zero temperatures, but in our effort to afford the best service to shippers of all perishable freight, we have developed 'all-purpose' mechanical refrigerator cars equipped with humidity, as well as temperature controls, to prevent dehydration of fresh fruit and vegetables.

"Twelve such cars are now in service and the 132 on order will be so equipped. Experimental shipments of fresh fruits and vegetables to date have included potatoes, celery, citrus fruits, peaches, apples, tomatoes, and mixed vegetables.

"To briefly describe the two systems employed by us:

"The Frigidaire system consists of a 34-hp. diesel engine, 20 kw. alternator, compressors, condenser, evaporator coils, and blowers for circulating cold air from the evaporator coils. The entire unit is located in a compartment at one end of the car. The unit, except the evaporator, is separated from the loading space by an insulated wall.

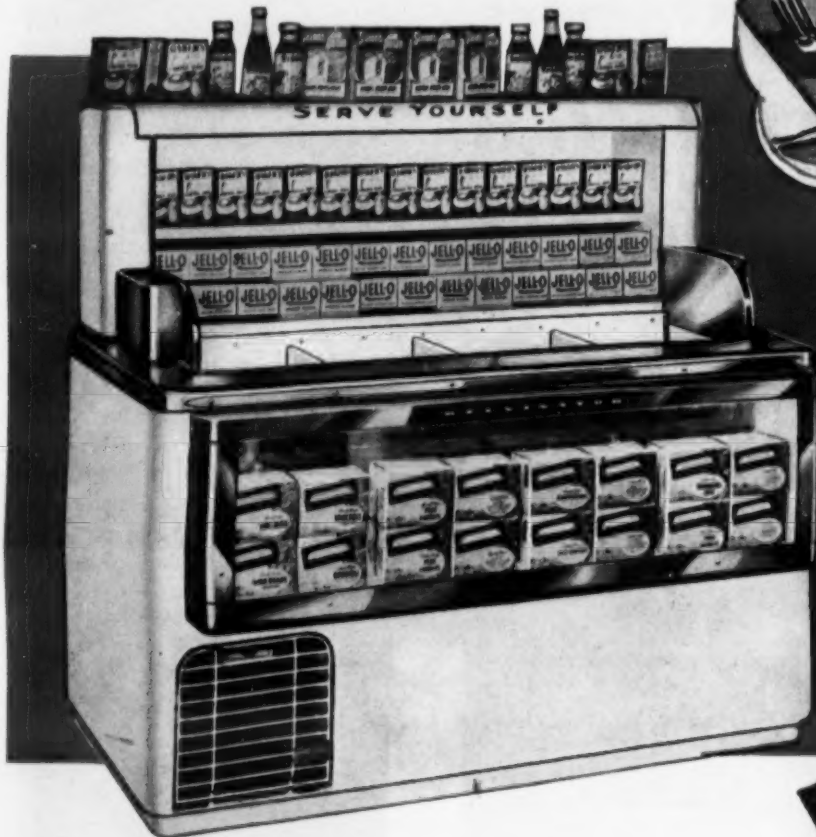
"The Thermo-King system consists of two packaged units located in one end of the car, each unit comprised of a 28-hp. gasoline engine, compressor, condenser, evaporator coil, and air circulating fans. 'Freon-12' is used as the refrigerant in both systems.

"Of the total of 307 mechanical cars mentioned, 73 will be 40-ft., 50-ton cars and 234 will be 50-ft., 70-ton cars.

"A 50-ft. overhead bunker refrigerator car fully iced with crushed ice and 30% salt weighs 7½ tons more than a car of similar general design equipped with the Frigidaire mechanical refrigeration system and fully serviced with diesel fuel.

"A 40-ft. end bunker car fully iced with coarse ice and 30% salt weighs 5 tons more than than a car of similar construction equipped with the Frigidaire system and fully fueled."

This Salesman Sells Complete Meals!



New Superstructure on Kelvinator 12 cu. ft. Frozen Food Merchandiser has more than 8 sq. ft. of shelf space to display, promote and sell high profit non-refrigerated items!

Look at all the hard-working, point-of-sale display space built into this new Kelvinator superstructure. Now a great variety of foods can be displayed—soup, sauces, cake mixes, coffee, cocoa, packaged desserts, all sorts of canned goods. Here's a superstructure that will promote and sell complete meals . . . announce special "deals" . . . stimulate multiple purchases . . . sell more frozen foods!

Superstructure and cabinet interior illuminated

Cool, fluorescent indirect lighting gives a "come-on" glow to the superstructure, and simplifies the selection of frozen food in the cabinet. The "Showcase" front (an

optional accessory), which displays dummy frozen food packages, is also illuminated. The Kelvinator merchandiser itself is designed to give maximum refrigerated space for rapid turnover . . . yet the cabinet is so compact that it utilizes remarkably little floor space. For full information, write Kelvinator Commercial, Nash-Kelvinator Corp., Dept. AC-4, 14250 Plymouth Road, Detroit 32, Michigan.

SPECIFICATIONS—CAPACITIES					
Overall Dimensions (With Superstructure)				Approx. Capacity (Loaded within 3 1/2" of Top)	
Model	Height*	Length	Width**	Average 12 Oz. Packages	Cubic Feet (Approx.)
KM-12	52 1/2"	54"	30 3/4"	416	12 499 Lbs.
*24 1/2" to top of cabinet. Add 2 3/4" when used with casters.					
**Without "showcase" front.					

Get more...Get **Kelvinator**

THE BEST KNOWN NAME ON MODERN FROZEN FOOD CABINETS

Division of Nash-Kelvinator Corp., Detroit 32, Mich.

Kay-Tee
UNIT COOLER
by
KRAMER

offers more BTU's for less money as a result of extensive engineering advances and the development of KRAMER'S newly patented fin and tube construction.

Write for Catalog R-225

In seven sizes, 2,500 to 12,000 BTU's per hour

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Low Temperature Refrigeration

More Intensive Requirements In Aircraft Test Cabinets and Broader Use Of Sub-Zero Temperatures In Industry Increase Its Importance

DETROIT—Some of the current applications and problems of low temperature refrigeration were reviewed recently for the Detroit ASRE section by Thomas J. Lopiccolo, president of American Research Corp. and a pioneer in this field.

"Primarily," he explained, "we're discussing simulation of environment, which includes low temperatures."

Much more than just low temperature is now being required, however, Lopiccolo said.

"In World War II, for example, test chambers had to produce -40° F. and simulate an altitude of 50,000 to 60,000 ft. At the beginning of the Korean war we were working at temperatures of -120° F. and altitudes 100,000 ft. Today we're talking about altitudes of 350,000 ft. and temperatures in the neighborhood of 600° to 700° F.—heat not cold.

"Originally environmental 'specs' called for control of temperature, humidity, and altitude. Now they're getting more complicated, such as also including sand and dust in motion with continuous indication of humidity.

"Another example is that of providing means to test an explosive mixture at high altitudes," he continued. "Here both lean and rich mixtures of gasoline or butane vapors are exploded at various simulated altitudes, and provision must be made in the test chamber not only to pro-

duce the desired conditions but also to keep the chamber itself from being wrecked every time there's an explosion."

On this point, incidentally, Lopiccolo said that at altitudes of over 70,000 ft. these mixtures wouldn't explode.

"The molecules are too far apart. Each one may burn individually but there won't be an explosion," he explained.

USE OF FREEZE-DRYING IS INCREASING

"Industry today is using much of the equipment developed for wartime use. One example is freeze-drying which is employed for materials that would be harmed by heating.

"Here the product is first frozen and then exposed to a vacuum which will cause the ice in the product to sublimate, that is, change to vapor without going through the water stage.

"Shelf life of materials dried this way is lengthened tremendously, and the removal of the moisture leaves a porous product sponge-like in appearance which will dissolve almost immediately when distilled water is added just before use.

"In the freeze-drying process air, with the moisture, is pumped from the vacuum chamber through a 'trap' to the vacuum pump. The trap provides parallel flow of air between concentric refrigerated plates where the moisture drawn from the product being dried collects in the form of hard, clear ice. When 95% of the moisture has been collected in the trap, it is by-passed and the remaining moisture removed by the pump alone."

REFRIGERATION FOR FILLING LOW PRESSURE CANS

Use of low temperature in filling low pressure cans with refrigerant-insecticide mixture at high speed in conventional filling machines was also cited by Lopiccolo. Both the containers and the mixture are cooled so that refrigerant pressure is zero, the cans being filled at the rate of 120 per minute.

Increasing application in industry of low temperature for expansion fitting of parts instead of shrink fits was mentioned, too. Expansion fits often prove more practical, he explained, when the part to be inserted is considerably smaller than the casting, say, in which it fits. This small part can, in many cases, be shrunk by low temperature refrigeration more economically than the large piece it fits can be expanded by heating.

"Also," he pointed out, "small imperfections on the surface of the large piece may score the bushing, say, when it's forced in. The resultant scoring may let the bushing come out with less pressure than required to insert it. With expansion fitting,

however, the surface imperfections of the large part will help hold the bushing in place when it warms up and expands."

PROBLEMS IN LOW TEMP. WORK

Questioned about the use of oil separators on low temperature systems, Lopiccolo declared that "they must be included. However, at best, an oil separator won't take out more than 80 to 90% of the oil, and the rest is what worries us."

Improvement of oils for low temperature in recent years has alleviated this problem considerably, he indicated.

"Also, these units usually operate on short cycles so that oil that is cooled in the system to the point where it stops flowing, soon gets a chance to warm up and return.

"There is also a problem with oil in the compressor crankcase, and on multi-cylinder compressors that are staged, you can get different loading on different bearings.

"Oil for low temperature applications has to be able to withstand high temperatures in the crankcase and still provide lubrication while also withstanding low temperatures in the low side. The latter requires an oil of low viscosity, but this same oil may not have enough strength in the compressor at high temperature to provide good lubrication."

This also involves the problem of



maintaining proper pressure and oil level in the crankcase, especially when more than one compressor is used. While this is particularly true of splash feed compressors, similar difficulties can be encountered with force-feed lubrication compressors, he said.

"Even with gear type oil pumps if the vacuum in the crankcase is greater than the capacity of the gear pump, say 28 in. compared with a 20-in. pump capacity, it simply won't pump oil. So, the crankcase has to be pressurized."

In answer to other questions Lopiccolo said, "Not enough work has been done yet with silicone additives for oil, or with new refrigerants like 'Freon-13' and 'Freon-14' so that we can talk much about them. We may know a year from now that some things we're doing today shouldn't be done."

How much more serious is the moisture problem in low temperature than in normal temperature systems? he was also asked.

"This is very serious, often because of the very small orifices in the valves used. These orifices also become easily plugged up with any foreign matter. Moisture can get into the system when it's being assembled because it lies open for a considerable

time. Also, every joint is a potential source of trouble.

"Silver soldering forms some moisture and also can oxidize the copper. To prevent this we fill the system with dry nitrogen during the soldering operation. The nitrogen also scavenges out air and moisture. Following this we use the double evacuation method, breaking the system with nitrogen between the two evacuating periods."

UsAirco Names Distributor For Southwest Texas Area

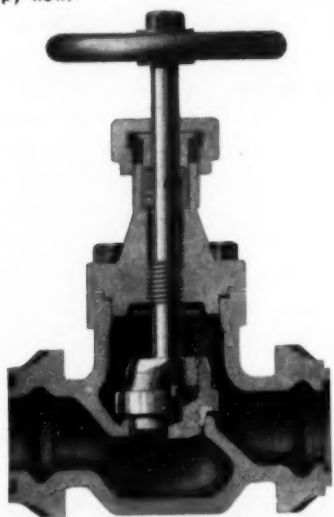
MINNEAPOLIS — The Standard Distributing Co. of San Antonio has been named a distributor of its upright store-type air conditioners, it is announced by the United States Air Conditioning Corp.

Standard, which is headed by Abe Epstein, president, and has been identified with the electrical appliance field for many years, will cover a territory embracing 62 counties in southwest Texas.

The company will handle the complete UsAirco store conditioner line, which includes 2, 3, 5, 7½, and 10-ton units, as well as a special 10-ton model with two complete separate 5-ton refrigeration circuits.

FRICK Valves

Are preferred for both ammonia and Freon service. Exclusive features, such as high-angle seats, are described in Catalog O, which also gives pipe sizes, weights, dimensions and prices. Get your copy now.

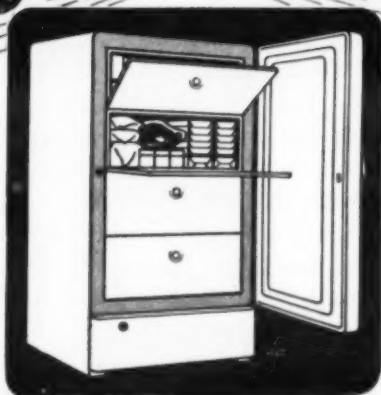


FRICK Co.
WAYNESBORO, PENNA. U.S.A.

Also Builders of Farm & Sawmill Machinery

1 YEAR • 5 YEARS
10 YEARS
LOOK AHEAD

— and
you'll buy
VICTOR
today!



- Model VUQ-18
- 18 cu. ft. Upright
- The ultimate in freezer compactness
- Many exclusive selling features



... Send for details of this Victor Upright

Quickfreezer and other items in the

Victor line that mean More Sales

... More Profitable Sales for You

Victor
VICTOR PRODUCTS CORPORATION
HAGERSTOWN, MARYLAND
MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZER

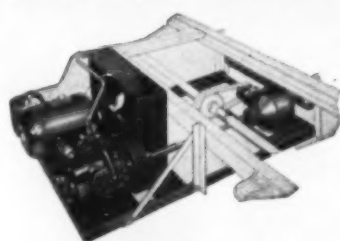
Why take a trimming...

How would you like to finish an entire season without loss from spoilage? Every time you incur a spoilage loss you are taking a trimming... you're scraping profits into the garbage pail.

Actually you're paying for Kold-Hold truck refrigeration now... why not enjoy its advantages? You not only save spoilage losses, but your trucks can make longer hauls. They can carry a full day's load to save time and manhours and make trips more profitable. Full flavor is retained so that you assure complete customer satisfaction. These benefits mean that dependable Kold-Hold truck refrigeration will pay for itself.

For example, one user reports: "Kold-Hold has saved us \$10,500 in less than six months."

KOLD-HOLD can answer any refrigeration problem!

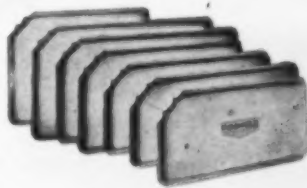


KOLD-TRUX

Which do you prefer... Mobile or Hold-Over truck refrigeration? Kold-Hold can give you either or a combination of both.

When your weather worries start, pick out the routes with the biggest refrigeration problems and call on Kold-Hold to give you a satisfactory solution. They will give you the right combination for your needs from such highsides as the Kold-Trux Mobile Unit, a mounted compressor, or make-and-break assemblies, coupled to such lowsides as Kold-Hold Hold-Over Plates, Thin Plates, Serpentine Quick-Action Plates, or Blowers.

Why not give us the details of your problems and let our engineers find the most efficient solution for you. Write today for details.



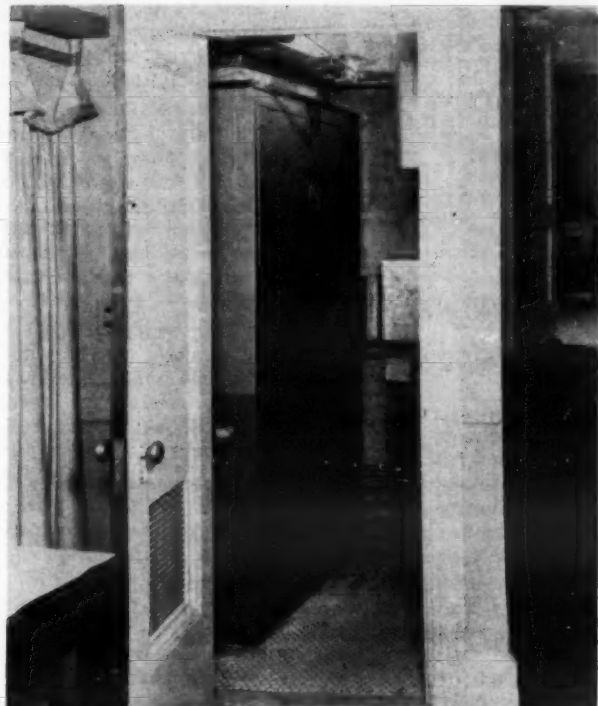
HOLD-OVER PLATES

Tell us your truck refrigeration problems and send now for complete data and literature.

KOLD-HOLD

KOLD-HOLD MANUFACTURING CO., 300 E. MAIN ST., ST. LOUIS, MO.

AIR CONDITIONING



FIVE-HP. UNIT is located on the balcony of the Eastchester Savings bank. The unit cools the president's office and conference room. Electric strip heaters are installed in the unit to temper outside air for winter ventilation.

Locating Air Conditioners In 3 Spots In Basement Eliminates Large Ducts That Would Make Area Useless

MT. VERNON, N. Y.—The recent modernization program of the Eastchester Savings Bank here included the installation of 42 tons of packaged air conditioning equipment.

The units, manufactured by Chrysler Airtemp Div. of Chrysler Corp., were sold and installed by Admiral Air Conditioning Corp., Yonkers, N. Y.

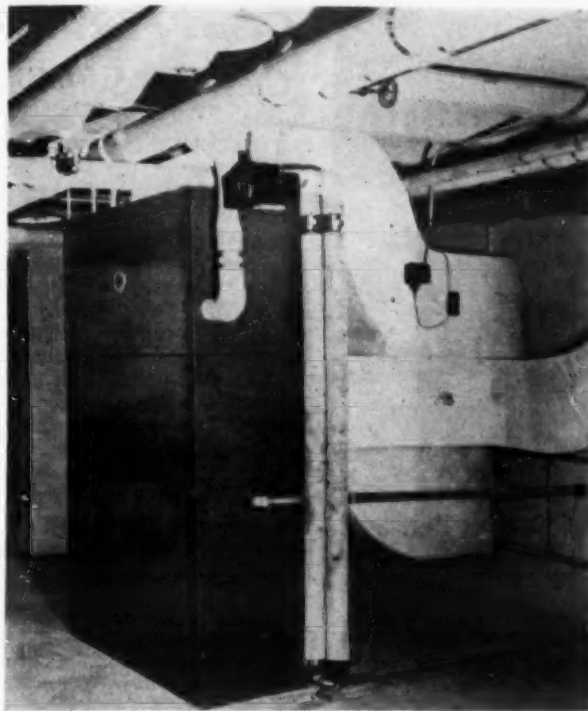
Three of the packaged units are used to condition the main banking

area. They are located in the basement of the building.

One 11-hp. air conditioner was placed in a file room at the front of the building. A 15-hp. unit was located in the basement stairwell at the building's center.

A third 11-hp. unit was placed in the stock room at the rear of the building.

The fourth unit, of 5-hp., was placed on the balcony between the



ONE OF TWO 11-hp. units located in the basement. Front and rear locations eliminate tremendously large ducts in the low-ceilinged basement. A third 15-hp. air conditioner was placed at the foot of the bank's central stairwell.

president's office and the conference room to provide individual temperature control for this area. Electric strip heaters were installed in this air conditioner to temper the outside air for winter ventilation in the conference room.

"By locating the units in the three basement positions, the use of very large ducts—which would have made 50% of the basement unusable due to low ceiling height—was eliminated,"

it was reported. "Also, the need for ducts running the length of the ceilings and walls in the main banking area of the structure was eliminated.

"The conditioned air is distributed from the front and rear of the bank building.

Because of the flexibility of the packaged units, no structural changes were necessary to install the equipment."

Coleman Elects Tullis Engineering Vice Pres.

WICHITA, Kans.—Boyd W. Tullis has been elected vice president in charge of engineering of the Coleman Co., Inc., it is announced by Sheldon Coleman, president and general manager.

He will direct all design and research activities dealing with product development.

Tullis is widely known for his achievements in the field of combustion engineering and for more than 35 years has been identified with the design and development of liquid fuel appliances for heating, cooking, and lighting.

The new Coleman vice president joined Coleman in 1917 and three years later was sent to Toronto, Can., as production manager of the first Coleman factory in Canada. He returned to Wichita in 1926 as chief design engineer of the parent company.

In 1950 Tullis spent six months in Australia as consulting engineer to an Australian company licensed to manufacture Coleman lanterns and camp stoves.

Tullis has served on the board of directors of the company since 1949.

MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page.

Use Key No. for fastest service.

YOU PROFIT BY

Curtis EXPERIENCE
in 15 years
of Packaged Air Conditioning Pioneering

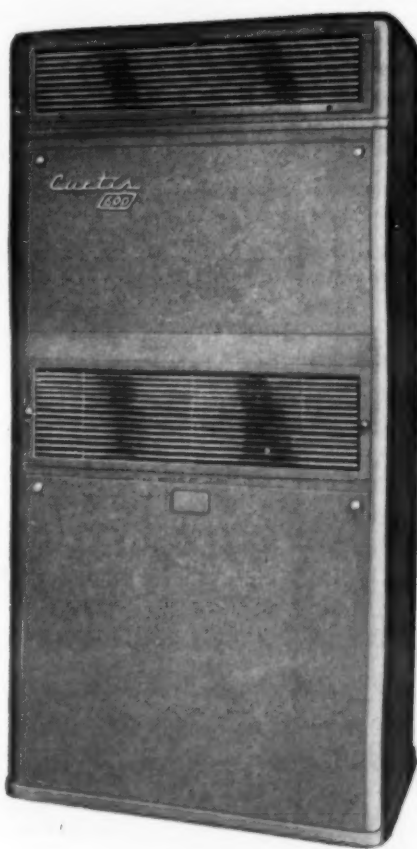
One of the First in the Industry

Curtis units that were installed back in the days when packaged air conditioning was a novelty are still giving faultless service. Today's Curtis packaged units are better than ever...perfected by 15 years of experience.

YOU'LL SELL more packaged units when you sell these Curtis advantages:

- Long life, slow speed operation
- Quiet and dependable
- 5 year warranty
- Easy installation
- Attractive, modern appearance
- Complete range of sizes — 2, 3, 5, 7½, 10 and 15 tons

Nationally Advertised in THE SATURDAY EVENING POST, TIME and NEWSWEEK.



For Full Information
MAIL THIS COUPON
WITH YOUR LETTERHEAD

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company (Since 1854)
1912 Kienlen Avenue • St. Louis 20, Mo.

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company
1912 Kienlen Avenue, St. Louis 20, Missouri

I am interested in direct factory franchise. Send complete details.

Company Name.....

Street.....

City..... Zone..... State.....

Signed.....

Ready...NOW!

THE NEW BURKS IHV SERIES PUMPS FOR AIR CONDITIONING APPLICATIONS

Here they are—the great new Burks IHV Series Centrifugal pumps! Designed especially for air conditioning use—and engineered for highest possible efficiency.

- Can be used either horizontally or vertically—without any mechanical changes.
- Patented "Kam-Action" impeller-volute combinations.
- Full length solid stainless steel shaft. Assures perfect alignment of motor, shaft and impeller.
- Balanced bronze impeller means smooth, quiet operation.
- Available in sizes from ¼ hp. through 5 hp.—single and 3-phase.
- Heads to 195 feet—capacities to 110 gallons per minute.
- Equipped with supply and discharge pressure gauges, and control valve for adjusting to the most efficient pressure for each installation.



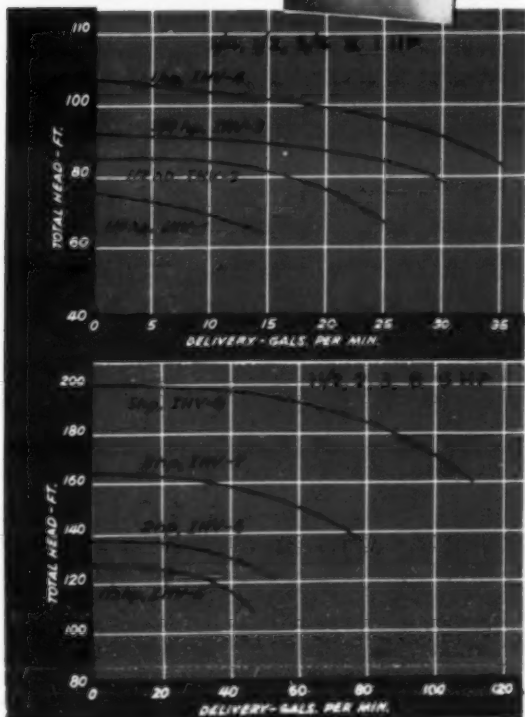
PATENTED "KAM-ACTION"

An exclusive Burks impeller design with straight-line volute. Increases efficiency, performance, capacity.

Write—today—for full details
DECATUR PUMP COMPANY
25 Elk St., Decatur 70, Ill.



PERFORMANCE CURVES
BURKS IHV
SERIES PUMPS



SALE specialty SELLING METHODS



VACATION POSSIBILITIES are unlimited, Thomas J. King and "Mrs. Homemaker" (Mrs. Margaret Girardin of Detroit) agree after looking over dozens of travel folders. King, director of Kelvinator advertising and sales promotion, is helping Mrs. Homemaker pick out the kind of vacation she'd like to win in Kelvinator's "Homemaker's Holiday" contest, now under way. Added distractions are models representing the principal vacation areas of the U. S.

Kelvinator Spring Sales Program Gets Off To Fast Start with Big Consumer Contest

DETROIT — Kelvinator's spring sales program is spearheaded by a nationwide "Homemaker's Holiday" consumer contest which will continue to July 4.

The contest, which offers every American family a chance to win a free vacation, includes a total of 5,424 prizes. Grand prizes are 24 cash awards of \$1,000 each for the family vacation, followed by 120 awards of Kelvinator appliances, and 5,280 awards of \$25 and \$5 each.

The contest, which began with the Easter holiday and ends with the Fourth of July, is divided into six periods of two weeks each. During each two-week period, four grand prizes and 900 others will be awarded.

T. J. King, director of advertising and sales promotion, said the contest would be supported by the biggest 90-day advertising campaign in the company's history.

National schedules call for an opening four-color center spread in *Life*.

Following will be a concentrated series of two more two-page spreads, 16 inside or back covers, 15 full page, five 1/2 page and seven 1/4 page ads in such national publications as *Life*, *Saturday Evening Post*, *Time*, *This Week*, *American Home*, *Better Homes & Gardens*, *Good Housekeeping*, *Ladies' Home Journal*, *McCall's*, *Parents' Magazine*, *Sunset*, *Home Modernizing*, *Small Homes Guide*, and *Farm Journal*.

"A continual flow of key city advertising will bombard major areas with the Kelvinator message."

"For three months, additional support will be provided over NBC television, by means of Tommy Bartlett's 'Welcome Travelers' show."

"Rounding out the preparations are a complete supply of display and store-trim packages, radio and TV spots, local ad drop-ins, and co-op mats to help the dealer develop his own local newspaper tie-in program."

"Use of this specific type of contest activity provides Kelvinator dealers with a volume-building program that combines powerful national appeal with direct local impact," King said.

Under the rules of the contest, any resident of the continental U. S. not a member of the Kelvinator "family" may enter by visiting the local Kelvinator dealer, and obtaining an entry blank. The entrant then receives a product-demonstration by one of the salesmen, who signs the entry blank.

The entrant then writes, "Why I like the Kelvinator (any product)" in 25 words or less, and mails in the completed entry blank.

The first contest period began Sunday, April 5, and closed April 25; the second closes May 9; the third, May 23; the fourth, June 6; the fifth, June 20; and the sixth, July 3.

Entries will be entered in each contest as they are received; those not received by closing dates will go into the next contest period. Entries for the final contest must be postmarked not later than midnight, July 3, and received by the judges not later than July 10.

Gibson Features Range Replacement Campaign; Customer Self-Check Leads Off 6-Point Program

GREENVILLE, Mich. — Realizing the extent of the huge market made up of old-range owners, Gibson Refrigerator Co. has come up with a promotion for dealers that results in prospects doing their own comparisons between new range models and old.

Key piece of the campaign is a mailer including a check list and a pencil. Prospects are asked to check a Gibson range against their present models on 21 points. After the prospect checks the list, there's a plastic tablecloth given free when he visits a Gibson dealer with the chart.

Follow-up on the chart mailing is another piece which makes a dollar-and-cents trade-in offer to the prospect.

Gregory V. Drumm, Gibson advertising manager, said the electric range replacement market is "one of our dealer's best bets for new range sales."

Drumm explained: "Present users already know the basic benefits of electric cooking; there is no installation problem or extra cost; and present electric cooking customers need only to be shown the improvements of new models to see how urgently they need a new electric range."

The replacement range campaign moves in six major steps, Drumm said. First is planning by the dealer, who is advised to set aside a special week or more.

Second step is installing of displays.

Then the dealer is advised to send the first mailing piece, which

includes the check list and pencil.

Fourth step is to register prospects when they visit the store and have the salesman give a selling pitch on Gibson ranges. Fifth step is to offer an incentive to close the sale. Drumm recommended that dealers offer a dollar for each "no" on the prospect's check list.

Final step is to follow-up leads. In this step dealers are advised to figure out a deal, complete with cash incentive.

To help dealers, Gibson has included a list of selling and talking points for use by salesmen.

Full Price—Less 50c a Month—Allowed on Old Refrigerator

BUFFALO—Delegato's Appliance Store recently announced it would allow a customer the full purchase price on his old refrigerator, less 50 cents per month for every month the customer had it. The offer applied to any make and any model refrigerator in Delgado's stock.

Here's the way the store explained it in newspaper advertising: "Suppose you bought a refrigerator in 1940. You paid \$279.95 for it. Delgado's will allow you the full purchase price toward any new Kelvinator—less 50 cents a month for every month you had it. That figures to \$279.95, less \$78 (50 cents a month for 12 years) or \$196.95 trade-in allowance on this particular model."

Free Linoleum Offer Sells 33 Appliances In 10 Days Following Newspaper Ads

RICHMOND, Va.—An offer of free inlaid linoleum for kitchen floors sold 33 Norge appliances in ten days for a local dealer recently.

Reliable Furniture Co. used a 6 col. by 20-in. ad twice during one week in the *Richmond News Leader* to do the trick.

The ads offered standard weight inlaid linoleum in 20 patterns to fit any size kitchen at no extra charge with each purchase of the listed Norge appliances. Featured appliances were two refrigerator models, an automatic washer, and an electric range.

Within ten days, the store sold 13 refrigerators, five ranges, and three automatic washers. Twelve conventional washers that weren't included in the flooring promotion were sold as indirect results of the ad.

The dealer's cost for the linoleum was between \$10 and \$15 per kitchen, it was reported. The installation was done by trained floor mechanics.

A Dollar Down Delivers

BINGHAMTON, N. Y. — Sullivan Bros. appliance store, here tied in with a recent city-wide Dollar Day promotion of Binghamton merchants by pointing out that a dollar delivers any major appliance in the store.

The promotion was staged with an unusual newspaper ad featuring the theme: "Your Dollar Is King Here."

Perfect Parts . . . Made to Order

ALUMINUM Freezer LINER PANELS and SHELVING by REYNOLDS



Expect More—Receive More—With Aluminum Freezer Parts From Reynolds . . .

Take home freezer liner panels and vertical home freezer shelving for example. Reynolds mass-produces these parts with tubing brazed in position so that it's an integral part of the unit. Freezer panels and shelves are available in anodized finishes with plain or mar-resistant embossed sur-

faces. Vertical home freezer shelves are made of Reynolds special high strength aluminum alloys to insure maximum strength and rigidity. Freezer liner panels are shipped flat by Reynolds Aluminum Fabricating Service for savings to you . . . reach you ready for fast, easy assembly.

Expect More—Receive More—With The Help Of Reynolds Fabricating Specialists . . .

For superior freezer parts, as well as for highest quality aluminum refrigerator parts, you can depend on Reynolds Aluminum Fabricating Service for help on your design and engineering problems. Remember—Reynolds offers facilities, skill and experience. Aluminum offers rapid heat transfer, light weight, strength, freedom from rust and stain, attractiveness and economy. Com-

bine the advantages offered by Reynolds Aluminum Fabricating Specialists with the benefits offered by aluminum and be sure of "perfect parts . . . made to order." For full details, contact the Reynolds office listed under "Aluminum" in your classified telephone directory, or write Reynolds Aluminum Fabricating Service, 2053 South Ninth Street, Louisville 1, Ky.

YOUR DOLLARS ARE STILL WORTH 100 CENTS IN ALUMINUM!



REYNOLDS ALUMINUM

BLANKING • EMBOSING • STAMPING • DRAWING • RIVETING • FORMING •

True

MODERN COOLERS FOR A MODERN AGE



Model T-832

Offers you

a quality line of

DRY BOTTLE BEVERAGE COOLERS

Modern Cabinet Design—Ahead of the Industry.
Self-contained Models Ready to Plug in.
Kelvinator Hermetic Units—Five Year Warranty.
Franchised Territory.

FOR ADDITIONAL INFORMATION WRITE:

TRUE MANUFACTURING COMPANY
2905 PINE STREET, ST. LOUIS 3, MISSOURI
Phone: LUcas 6700

To Eliminate Questionable Claims**11-Point Advertising Standard Adopted by Ft. Wayne Freezer-Food Plan Operators**

FORT WAYNE, Ind.—An 11-point set of standards for advertising freezer-food plans in Fort Wayne has been adopted by four local plan operators and a fifth has indicated that he will go along. C. Lane Breidenstein, manager of the Fort Wayne Better Business Bureau, Inc. announced recently.

The standards took effect on April 6. Copies of radio commercials, mailing pieces, contracts, and other pertinent material are being submitted to the bureau for scrutiny, Breidenstein said.

Although a few of the points in the Fort Wayne standards are identical with those adopted in other cities, many are worded differently and probe a little deeper to eliminate questionable claims and sources of customer dissatisfaction. They are as follows:

1. The fact that a freezer must be purchased should be made abundantly clear and should not be subordinated so that readers do not understand the nature of the purchase and the extent of the obligation.

2. Such expressions as "no cost to you," "free," and general savings claims which are not explained should not be used. Any statements or claims of this nature will be based on authentic facts which the advertiser or seller will be ready and willing to provide.

3. If a price for food is used in advertising, the quantity and cuts which must be purchased at this

price shall be prominently stated.

4. Terms such as "no down payment," "no money down," or terms of similar meaning shall not be used if an advance payment of any kind is required on either the freezer or the food.

5. It shall not be advertised or stated that a specific quantity or selection of foods in a freezer-food plan will be adequate for the purchaser's entire requirements in any specific period.

6. No advertising of a freezer-food plan shall quote specific payments per day, week, or month.

7. All statements that food is being offered at wholesale, near wholesale, wholesale prices, or in wholesale lots should be eliminated.

8. If Government grades of food are used in advertising, or quoted, the food so offered shall be actually Government graded. If packers' private brands or grades are advertised, the food shall have been processed by that packer.

9. General superlative claims such as "lowest possible market prices," or "lowest quantity prices," shall not be used.

10. When percentage claims of savings are advertised they should be qualified in the same prominence as the figures used to indicate whether the savings are on food costs alone, or upon the total food budget of the buyer.

11. If a "warranty," "service contract," or any other type of agree-

ment is sold with a home freezer, for which an extra charge is made, such agreement shall be in writing and shall be supplied the purchaser at the time the sale is consummated or the freezer and food are delivered.

Wilson Appoints 2 Freezer Distributors In N. C., Miss.

SMYRNA, Del. — Announcement was made here by Aubrey A. Davis, sales manager of Wilson Refrigeration, Inc., of the appointment of two new distributors for Wilson home freezers. They are Clinard Electric Co. of Winston Salem, N. C., and Ed Doughty Electric Co. of Columbus, Miss.

Clinard Electric will act as exclusive distributor for Wilson freezers in all but 14 counties in eastern North Carolina. Sales will be under the direction of B. C. Clinard, president of the organization, and James Jones, sales manager. This company also distributes Apex Washers.

Ed Doughty Electric will cover 10 counties in eastern Mississippi and four counties in Alabama. Ed Doughty is president and Red Watson sales manager of the organization.

Lowcher Heads Deepfreeze Sales In Los Angeles Area

NORTH CHICAGO — John G. Lowcher has been appointed Los Angeles district sales manager of Deepfreeze Appliance Div. of Motor Products Corp., according to B. G. Sanderson, general sales manager of Deepfreeze.

Lowcher has wide experience in advertising, selling, and merchandising.

**Emphasis Placed on Freezer Section**

"GEARED TO MODERN NEEDS" is the claim made for the new Twin Zone freezer, which Freshmaster Corp. plans to put on the market. This new type of freezer-refrigerator provides less refrigerator than freezer space, on the assumption that only one day's food needs to occupy the refrigerator area. Consequently, a 19-cu. ft. Twin-Zone has 6½ cu. ft. set aside for frozen foods. It is 38 in. wide, 25 in. deep, and 70 in. high, taking up 5 sq. ft. of floor space—no larger than a comparable refrigerator.

Freezer Shipments Double In Union Electric Territory

ST. LOUIS—January shipments of home freezers by certain distributors to their dealers in territory served by the Union Electric Co. were more than double those of the same month in 1952, the utility reported recently.

Shipments of refrigerators, ranges, water heaters, conventional washers, and automatic washers also rose sub-

stantially. Dryer sales were off.

Freezer, refrigerator, water heater, and conventional washer shipments were also higher than in December. But range, automatic washer, and dryer shipments were down.

Unit sales and percentage of change between Jan. 1953, Dec. 1952, and Jan. 1952 are as follows:

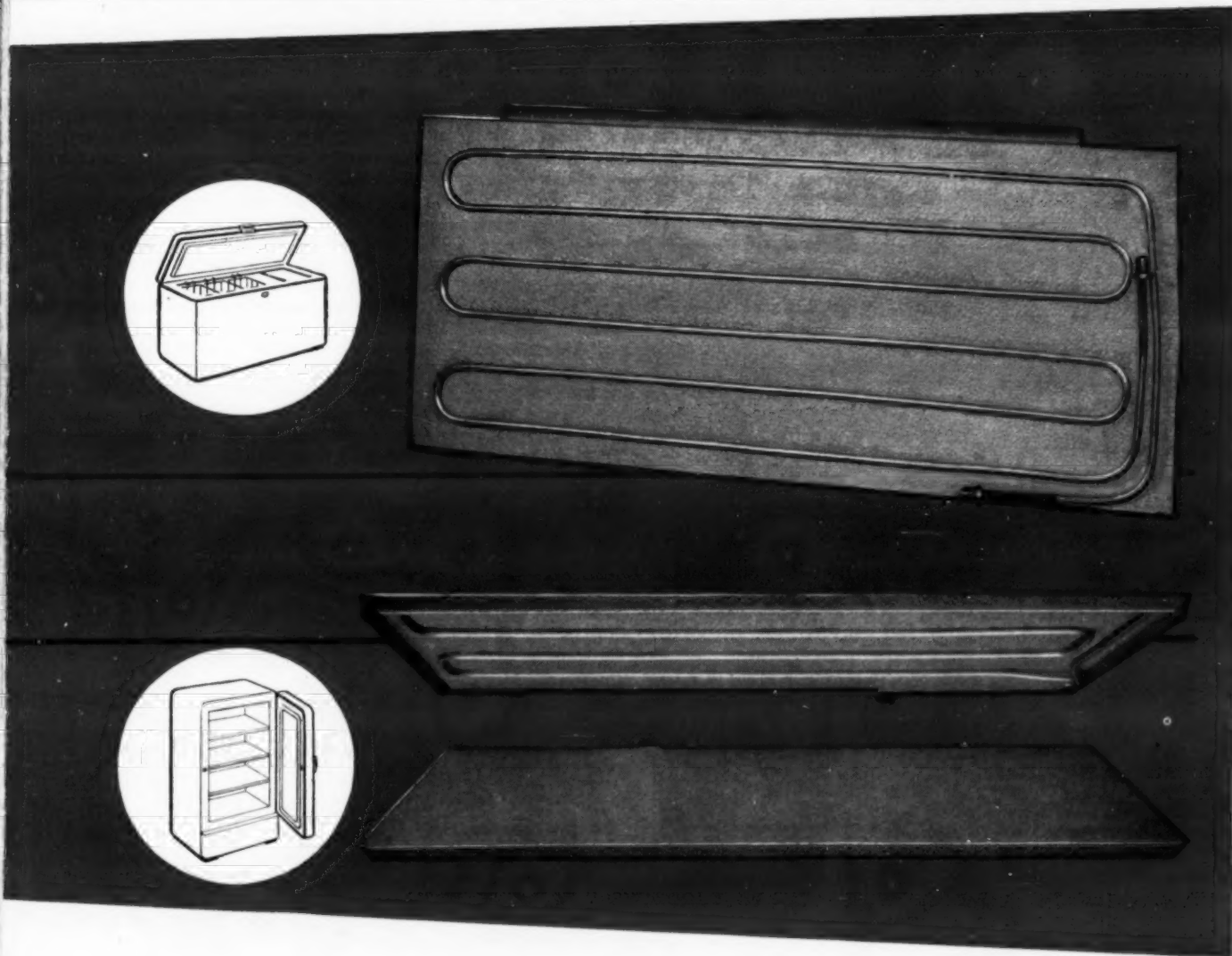
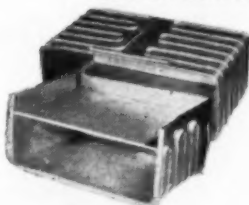
	Jan. 1953	Dec. 1952	Jan. 1952	Dec. 1952	% Change Jan. '53 over Jan. 1952
Appliance					
Refrigerators	2,732	2,272	1,653	20.2	65.3
Freezers	737	471	337	56.5	118.7
Ranges	660	1,353	521	-51.2	26.7
Water Heaters	294	284	205	3.5	43.4
Automatic Washers	722	947	507	-23.8	42.4
Conventional Washers	747	636	599	17.5	24.7
Dryers	356	543	688	-34.4	-48.3

United Appliance Chartered

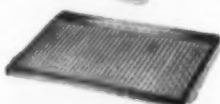
MONROE, La.—United Appliance Stores, Inc. here has been granted charter of incorporation listing capital stock of \$50,000.

Reopen Remodeled Store

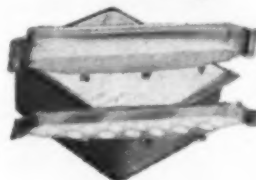
DURYEA, Pa.—Jacob Kurlancheek has reopened his expanded and remodeled appliance store at 415 N. Main St.

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REFRIGERATOR EVAPORATORS
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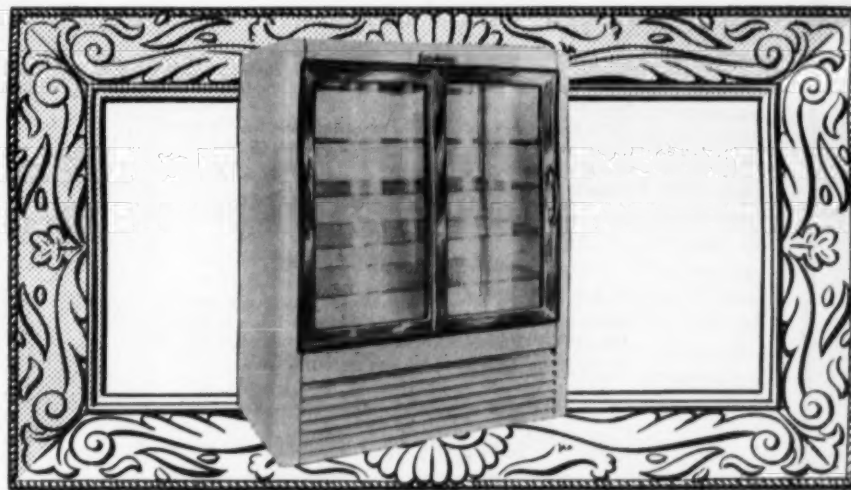
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Stainless Steel	✓	✓		✓	
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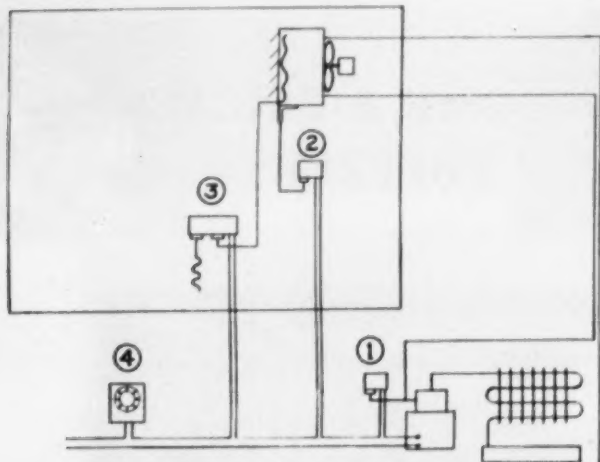


FIG. 1 shows four commonly used systems of automatic defrosting that don't employ supplemental heating. Numbers refer to text.

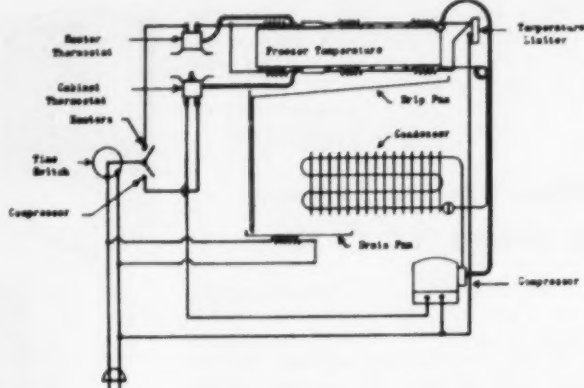


FIG. 2 shows an electrically heated evaporator on a household refrigerator.

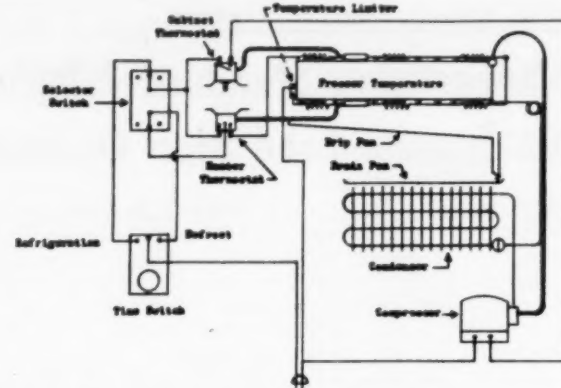


FIG. 3—This is another type of electrically heated evaporator used in a household system.

Defrost Systems (1)

Trend to Lower Temperatures, Other Factors Have Led to Development Of Variety of Rapid Automatic Systems for Commercial, Household Use

DETROIT — Closely finned coils, lower temperatures, wider use of frozen foods, and across-the-top evaporators have all contributed to the need for rapid automatic defrosting, Robert G. Raney of Ranco, Inc., told the Detroit ASRE section at a recent meeting here.

In reviewing various types of defrost systems now being used in both commercial and household refrigeration systems, Raney cited these four reasons "why the subject of defrosting is currently so important:

REASONS FOR IMPORTANCE

"1. The trend toward closely finned coils for smaller size and greater efficiency. In recent years blower coils with close fins have become very popular. The efficiency of these coils drops rapidly with the formation of frost and ice and therefore closely finned coils on low temperature op-

erations require frequent defrosting. "2. There has been in recent years a trend to lower temperatures.

"Meat cases used to be held above 32° F. Now many of them are held around 27° F. and the coil no longer has a chance to defrost on the off cycle.

"Walk-in coolers are being held cooler, and often with smaller and more 'overloaded' coils. The smaller coils must be run colder and must be quickly defrosted several times daily in order to keep up with their heat load.

"3. The tremendous growth of the frozen food industry in recent years has brought with it many refrigeration systems in which rapid defrosting is very important—food processing plants, cold storage plants, frozen food display cases, and finally the frozen food chest in the household refrigerator.

"4. The advent of the across-the-top horizontal evaporator in household refrigerators. This less expensive and popular version of a two-temperature refrigerator presents a real need for automatic, rapid defrosting.

"The full width, flat evaporator is very difficult to manually defrost and clean off. Water runs off the evaporator and all down the inside of the refrigerator during manual defrosting.

OVER 150 PATENTS ISSUED

"Proof of the general interest in quick defrosting is the number and variety of defrost systems in use and the number of patents already issued on the subject. Patents covering the control system alone of defrost systems now runs well over 150," Raney said.

"Having covered some of the

reasons for the importance of defrosting, let us now examine some of the systems in current use.

4 COMMONLY USED SYSTEMS

"Fig. 1 illustrates four commonly used systems of automatic defrosting without the use of supplemental heating.

"No. 1 in Fig. 1 is a low pressure control set to cut in at a suction pressure equivalent to an evaporator temperature above 32° F., assuring complete defrosting before the next refrigeration cycle starts.

"In many cases this system will not work because the suction pressure does not necessarily reflect evaporator temperature," Raney said. "This is especially true in a multiple evaporator system. It is also true on remote installations in cold weather when the cold crank case prevents a suction pressure build-up equivalent to the defrost cut-in setting.

"No. 2 is an 'Avrgaire' temperature control with a part of the bulb responsive to evaporator temperature and part responsive to fixture air temperature. This control normally operates the system on a defrost cycle, the evaporator reaching a defrosted temperature on every cycle.

"Under unusual heat load conditions the air sensitive part of the bulb will cause the control to cut-in at a lower than defrosted evaporator temperature. When load conditions become normal, the temperature of operation returns to a defrost cycle.

"The No. 3 defrost cycle control uses a 'two-temperature' control. The bellows on the cut-in side of the control is attached to the evaporator and is calibrated to cut-in at a defrosted evaporator temperature.

"The bellows on the cut-out side of the control is sensitive to the fixture air temperature and will prevent the control cutting out regardless of evaporator temperature until the air

temperature is lowered sufficiently to satisfy the cut-out calibration.

"No. 4 defrost control shown here is a timer in the control circuit that will simply open the control circuit for a fixed period of time at set intervals. The defrost time setting must be broad enough to allow complete defrosting under all conditions."

"PREVENTIVE" SYSTEM

Another defrost method mentioned by Raney employs a "preventive" system, which "by constantly washing away the moisture from the evaporator coils maintains the evaporator at maximum efficiency and prevents frost formation.

"This system is used on large installations and adds to the normal refrigeration system a 'regenerator' and circulation system," he explained. "A non-toxic water absorbing antifreeze solution is constantly sprayed over the evaporator coils, collected, and 'regenerated' (partially dehydrated) by passing it over hot coils in a low pressure, aerated chamber. Loss by evaporation is replenished by hand or automatically.

"A water defrost system," Raney continued, "is usually controlled manually but may be made automatic with a timer and solenoid valve in the water inlet line.

"Defrost is accomplished by shutting off the refrigerant, stopping the blower fan, then operating the valve to admit water to the header and down over the coils removing the frost once, and then out of the drain pan and drain line.

"When defrosting is completed, the inlet water is turned off, water drains back down through the valve from the header and from the drip pan, soon followed by resumption of refrigeration and the blower fan. This system requires an adequate supply of water well above 32° F."

(Continued on next page)

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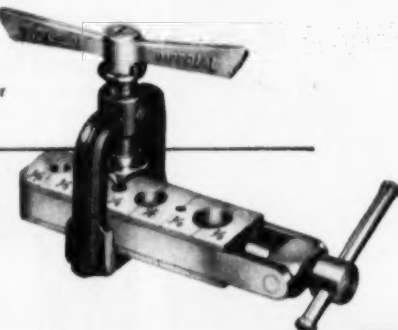
The outstanding favorite with refrigeration men everywhere. Has free-wheeling ball-bearing action. Roller type with flare cut-off groove. Retractable reamer, IMPERIAL No. 274-F... for 1/8" to 1" O.D. tubing. Other models for tubing up to 2 1/4" O.D.



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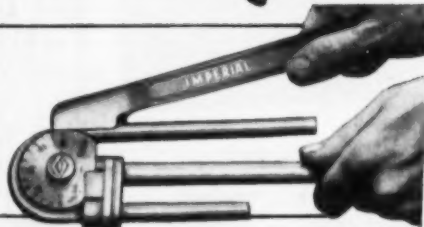
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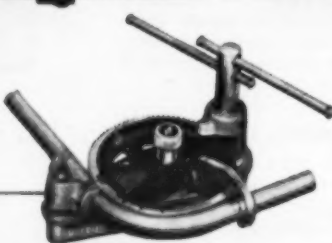
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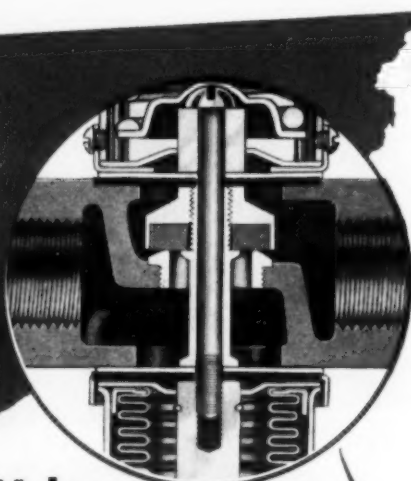
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INSIDE STORY



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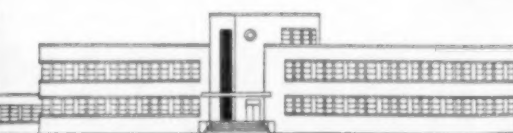
Look at the inside of the PENN Series 246 Water Valve and you'll see how the two nylon-reinforced rubber diaphragms definitely keep water away from the bellows, range spring and sliding parts. Water never has a chance to attack these "working parts" and cause disastrous rust, corrosion and sedimentation. That's why the PENN Series 246 stays on the job much longer.

In addition, PENN's advanced design eliminates water hammer and sticking of seats. And the valve is very sensitive to changes in refrigerant head pressures to assure highest efficiency.

Built in sizes from 3/8" to 2 1/2" and in flanged or threaded styles, Series 246 Water Valves are your best buy. Ask your wholesaler or write Penn Controls, Inc., Goshen, Indiana. Export Division: 13 E. 40th Street, New York 16, N.Y., U.S.A. In Canada: Penn Controls Limited, Toronto 13, Ontario.



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Service & Supplies

Automatic Defrosting Systems--

(Continued from preceding page)

USE OF ELECTRIC HEAT FOR DEFROSTING BLOWER COILS

The use of electric heat for defrosting blower coils was also described by Raney.

"The coil is in a housing that will close up when the blower is stopped. At the same time the refrigerant is stopped and the heater imbedded in the base of the coil is energized. The refrigerant in the coils helps distribute the heat throughout the coil to obtain complete defrosting.

"A safety limit switch is mounted inside the housing to open the heater circuit in the event of excessive temperature rise during the time-controlled defrost period.

ELECTRICALLY HEATED EVAP ON HOUSEHOLD SYSTEM

"Fig. 2 illustrates an electrically heated evaporator on a household refrigerator.

"Defrosting is accomplished when the time switch opens the compressor circuit and closes the heater circuit once each day, directing current through the defrost thermostat and to both the top and bottom evaporator heaters, through the temperature limiter switch, back to the other side of the line.

"When the heater thermostat bulb on the evaporator reaches a defrost temperature (about 45° F.), the heater thermostat opens the heater circuit. Normally, the time switch does not close for a while, allowing the evaporator to drain and the refrigerant pressure to equalize in the system before the time switch opens the heater circuit and closes the compressor circuit to resume normal refrigeration.

You will note there are three possibilities of opening the heater circuit; first, the heater thermostat will

open the circuit on heat rise; second, the temperature limiter which is a bi-metal control attached to the liner will open the circuit in the event the heater thermostat fails and the evaporator temperature rises abnormally. In addition to these two elements, the time switch will also open the heater circuit after a certain period of time, approximately 45 minutes.

"Reason for this much precaution is that the heaters, in order to accomplish a quick defrost, are rated on different refrigerators between 400 to 800 watts and must have safety controls.

"Defrost water is disposed of by collecting it in a drip pan under the evaporator, carrying it through a tube on the outside of the refrigerator, down to a drain pan in the compressor compartment where the continuously operating heater causes evaporation of the defrost water back into the room air.

"In this system a complete defrost is accomplished once every 24 hours and requires from 3 to 15 minutes of heater operation.

ANOTHER ELECTRICALLY HEATED SYSTEM

"Fig. 3 illustrates another electrically heated evaporator on household refrigerators," Raney continued.

"Defrosting occurs when the time switch, once each day, opens the refrigeration circuit and closes the defrost circuit, directing the current through the selector switch, through the single pole, double throw heater thermostat, through the heaters attached to the evaporator, through the temperature limiter switch, and back to the other side of the line.

"Incidentally, the selector switch can be set to a position of no defrosting or a position that will manually initiate defrost, or at the automatic

defrost position as shown in this diagram.

"The defrost cycle will continue until the bulb of the heater thermostat reaches a defrost temperature at which time the thermostat will open the heater circuit and immediately close the refrigeration circuit. There is no time delay between turning off the heaters and starting the compressor for normal refrigeration.

"It will be seen that this system also includes safety devices; first, the heater thermostat which will open the heater circuit on temperature rise; second, a temperature limiter bi-metal thermostat attached to the liner which will open the heater circuit on abnormal temperature rise; and third, the time switch which will open the defrost circuit and close the refrigeration circuit after approximately one hour.

"The defrost water is disposed of by collecting it in the drip pan and carrying it through an outside tube to the compressor compartment into a drain pan held immediately above the condenser where the heat from the condenser speeds up evaporation of the defrost water into the air.

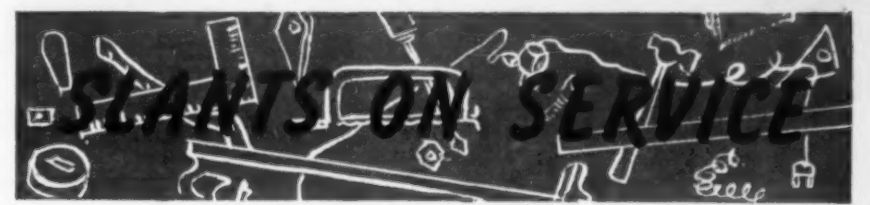
(To Be Continued)

Begin Air Conditioning of 21-Story Memphis Building

MEMPHIS — Announcement is made that work is now under way on the \$175,000 central year-around air conditioning program for Columbian Mutual Tower.

According to a spokesman for the owners, Columbian Mutual Life Insurance Co., the building is to be fully air conditioned through the 14th floor this year.

The air conditioning equipment contract is held by Stephen Bros.



Home-made 'Evap' Condenser Keeps Head Pressure Down

Did you ever run across a job where you just couldn't get the head pressure down?

W. Tegner of Oakland, Calif., did. He writes:

"After setting the overload as high as I dared and not getting the results I wanted, I knew I had to think up something new. It was a 2-hp. water-cooled job and the temperature at times went above 100°. Being an 'F-12' job, it was pretty hard on belts.

"Here's how I got around it. I had a sheet metal man make me a can that was open at one end and had a round hole cut in the side at the other. I mounted this can in front of the motor and installed a fan on the motor pulley. Then I ran a line from the discharge valve of the compressor, to return bends in the can and hooked the other end to the condenser.

"I ran a line from the water discharge of the condenser to the top of the can where it was formed into a loop with holes drilled in the bottom so that the water could hit the line from the compressor. The excess water drained into a sewer that had been used before."

This achieved other results or savings not looked for, he says. It cut down the electric bill; it cut down the

water bill, and the belts lasted much longer.

"The owner was very well pleased because the job paid for itself in a short time and after that it saved him money and stopped one of my big worries," Tegner adds.

G-E Shaded Pole Motors Can Be In Any Position

"In the March 9, 1953 . . . 'Slants on Service' column, the comment is made that shaded pole motors in any position other than horizontal should be ball-bearing equipped. I would like to take exception to that statement," writes A. L. Johnson, sales manager of the Specialty Motor Sub Department of General Electric Co.'s Fractional Horsepower Motor Department in Fort Wayne, Ind.

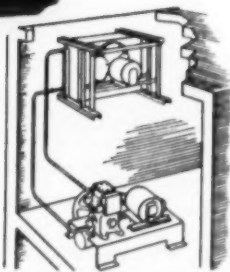
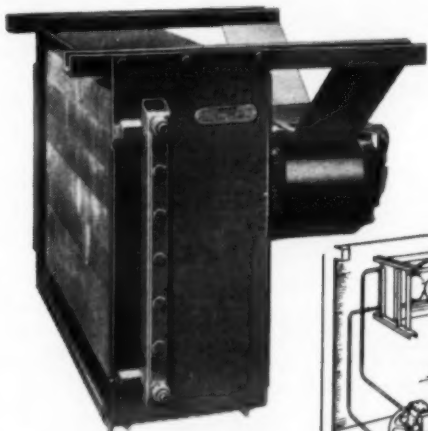
"While it cannot be ignored that this comment applies to some shaded pole designs, the rule does not apply to sleeve-bearing General Electric shaded pole motors which are designed to carry moderate thrust loads in any position—without impairing motor life," Johnson explains.

"This method of motor design has been incorporated in G-E shaded pole motors since 1940. The success of this motor design is proved by the fact that more than 10 million G-E shaded pole motors are now in service," he adds.

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Cleanable water tubes.

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While Dryseal may be stubborn about keeping out dirt and moisture it's a soft touch when it comes to bending. The soft temper of the copper used in Dryseal allows you to make the most intricate bends by hand. And its ductility and special temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from 1/8" to 3/4" O.D.

And, for your greater convenience, Dryseal is packed in a nifty 50 one-coil carton. This carton, which has been attractively designed for easy identification in stock, contains one 50-foot coil of Dryseal . . . is easier to handle, light weight, economical and is sturdily made to assure protection of the tube.

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Calculating Residential Cooling Load (3)

24-Hour Cooling Estimate Form Aids Simple Gathering of Data and Provides Quick, Accurate Method of Drawing Conclusions from Facts

This is the third and final instalment of an article prepared by two Carrier Corp. engineers discussing a simplified method of calculating residential cooling loads. They describe the company's "24-hour method" and show in detail how it's used.

By E. P. Palmatier and A. W. Carroll, Carrier Corp.*

The 24-hour residential cooling estimate form has been designed with the following objectives in mind: (1) To incorporate the assumptions and conclusions discussed above. (2) To offer the user a quick but accurate method of estimating. The mechanics of filling out the form consist of simply lifting the proper factor from one of the tables and inserting it in the space allocated in the estimate form.

Sensible heat only is calculated and this is done room by room. This procedure permits the determination of the correct air quantity to be supplied to each room.

In preparing the tables, types of building construction have been selected which are commonly encountered in residence. In cases where special materials have been employed or where the construction of the house is unusual, the estimator must modify the factors in the tables. The transmission coefficient,

or "U" value, on which the tabular factors are based is given in each case. Since the factors are directly proportional to the transmission coefficient an accurate factor for an unusual wall or roof may be derived if the applicable value of "U" is known or can be computed.

In computing the heat gain factors it was desirable to agree on a mean room temperature that can be established as a datum. Experience indicates that the occupant will accept a maximum of 78° room temperature coincident with maximum outside design conditions; particularly if the relative humidity is 50% or below. Field tests have also proved that a swing of 6° in room temperature is acceptable to the persons living indoors. Based on these two considerations, 75° has been selected for the daily average room temperature.

The glass factors in Table 1 have two components: heat gain due to solar radiation and heat gain due to heat transmission. The radiation intensity is practically the same as used in the 1952 ASHVE Guide. The daily solar heat gain through glass

areas has been computed by summing up the hourly values given in the above reference for a given orientation and latitude. Then this sum is divided by 24 to arrive at an hourly value. Inside shading corresponding to fully drawn venetian blinds, or the equivalent, has been assumed. The supposition here is that any owner of an air conditioned home will use good judgment in providing such window shading to reduce the cooling load.

If shading is not provided, the factors in the table should be increased by 17%. The solar heat gain through a window is also affected to an appreciable degree by shading due to roof overhang. The magnitude of effect varies the length of roof overhang, the latitude, and the orientation. The factors, with roof shading, are naturally less than those without shading and these have also been precalculated.

As mentioned above, the second component of the factors appearing in the table is the straight heat transmission through the glass due to the design difference between inside and outside temperatures. The outside air temperature, however, is a highly variable figure over a 24-hour period.

A representative outside air temperature may be obtained by introducing the sol-air temperature concept. Sol-air temperature is a fictitious outdoor temperature which would, if there were no radiation,



Table 1—Solar Gain and Heat Transmission Through Windows or Glass Doors

Windows Facing	(B.t.u./hr. Per Sq. Ft.)											
	ROOF OVERHANG (Inches)											
	0			12			24			36		
	90	95	100	105	90	95	100	105	90	95	100	105
30° N. Latitude												
N	9	15	22	28	9	15	22	28	9	15	22	28
NE, NW	9	25	32	38	9	25	32	38	8	23	30	37
E, W	29	36	42	48	28	34	41	48	26	32	39	45
SE, SW	27	34	40	47	26	32	38	45	19	25	32	38
S	17	23	29	36	13	19	26	32	9	15	22	28
35° N. Latitude												
N	9	15	22	28	9	15	22	28	9	15	22	28
NE, NW	18	25	31	38	17	25	30	38	16	24	29	37
E, W	29	36	42	49	28	35	41	48	26	32	39	46
SE, SW	29	36	42	49	28	34	40	48	22	29	35	42
S	21	28	34	41	17	24	30	37	13	20	26	33
40° N. Latitude												
N	9	15	22	28	9	15	22	28	9	15	22	28
NE, NW	18	24	31	37	17	24	30	37	16	23	29	36
E, W	29	36	42	49	29	36	42	49	26	33	40	46
SE, SW	32	38	45	51	30	37	43	50	26	33	39	46
S	26	32	39	45	23	29	36	42	18	25	31	38

NOTES:

Based on venetian blinds full drawn.
For omission of venetian blinds (no inside shading) increase values in table 17%.
For awnings use 1/2 value in table.
Shading due to roof overhang applies to single story house. For two-story home, figure shading for second floor, none for first floor.
Windows shaded all day by trees or buildings should be included as north windows. Consider outside solid doors as outside wall.

give the same rate of heat flow through the structure as exists with the actual outdoor temperature and incident radiation. Because the glass has very little capacity for absorbing radiated heat, it is permissible to use the daily mean sol-air temperature for a north wall.

For example, with a 95° outside design temperature and 20° F. swing, 83° would be the mean sol-air temperature. This would be true whether the glass area is shaded or not. Therefore, in applying it to the above example, the heat transmission through the glass area will be $1.13 \times (83-75) = 9.1$ B.t.u. per hour per

square foot based on a 24-hour period. The factors given in Table 1 include this transmission heat gain per square foot of glass area.

Table 2 presents the heat gain factors for sunlit walls. These figures take into consideration not only the usual conductivity of the structure and the outside design temperature, but also the absorptivity of outside surface to solar radiation and the daily range of the outside temperature. To compute the mean hourly transmission gain for a wall, the "U" for the particular construction is multiplied by the difference be-

(Continued on next page)

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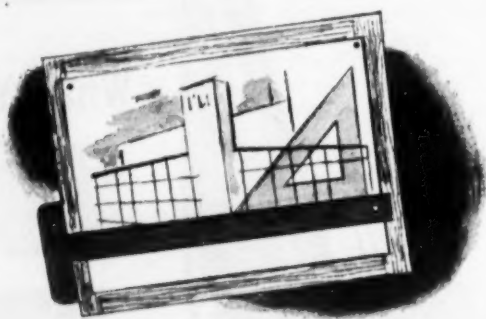
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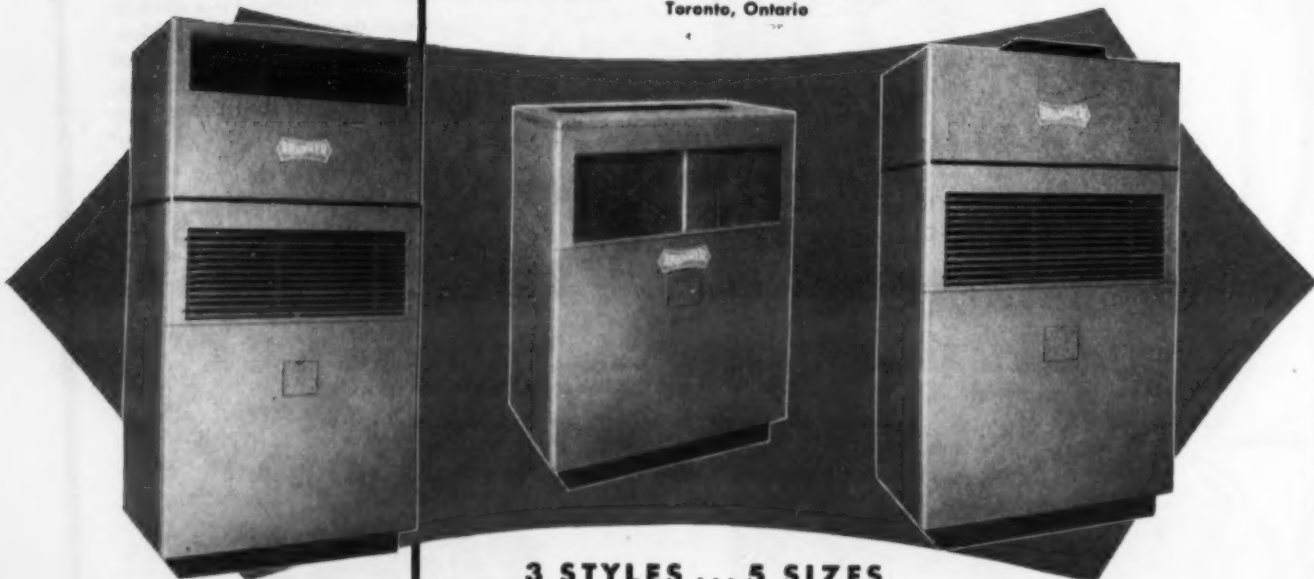


For the many installations where efficiency and economy must be combined with application flexibility—these new "packaged" BRUNNER AIR CONDITIONERS are the answer! Precision-built, powered by the famous Brunner quiet slow-speed compressors—these self-contained units permit complete freedom of application planning for every type of job. Easy to install anywhere—and, like all Brunner products, they are engineered for fast, simple servicing in the field.

15 models to choose from—for within room-circulating or remote duct operation. Attractive enamel cabinets clean easily—blend into any decorative plan. A FIVE YEAR WARRANTY on the Brunner Compressor in every unit assures satisfactory service. See these BRUNNER Air Conditioners... see how they can fit profitably into your air conditioning picture...

Brunner Manufacturing Company
Dept. A-43, Utica, New York, U.S.A.

IN CANADA: Brunner Corporation (Canada) Limited
Toronto, Ontario



3 STYLES... 5 SIZES

Brunner Air Conditioners are available in 3 styles (shown above)—each style in 2, 3, 5, 7 1/2 and 10 H.P. sizes. Complete information, specifications and ratings sent upon request.

YOU'LL ALWAYS BE GLAD YOU SOLD A

BRUNNER
SINCE 1906

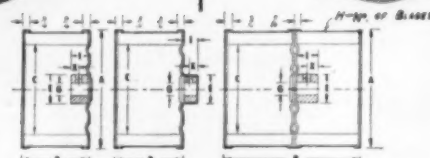
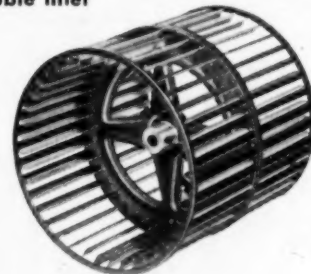
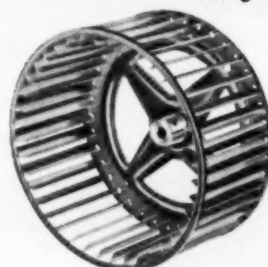
LAU

single and double inlet

WELD WHEELS

LAU all-Welded Construction with individual blades of correct length, width and pitch with embossed back or center plate for maximum strength. Greater air delivery... better pressure characteristics... truer balance and long, trouble-free service for greater than usual blower wheels.

Single inlet • Double inlet



Wheel No.	A Dia.	B—Width			C	E	G—Bore			I	X	Y
		Min.	Max.	Std.			Min.	Max.	Std.			
WW 4 1/4	4 1/8	1 3/4	3 1/2	2 1/8	3 1/8	1	1/4	1/2	1/4	1 1/8	1/4	22
WW 4 3/4	4 3/8	1 3/4	3 1/2	2 3/8	3 3/8	1	1/4	1/2	1/4	1 1/8	1/4	24
WW 5	5 1/8	1 3/4	4	2 1/2	3 1/8	1 1/4	1/4	1/2	1/4	1 1/8	1/2	26
WW 6	6 1/8	1 3/4	4	3	5	1 1/4	1/4	1/2	1/4	1 1/8	1/2	32
WW 7	7 1/2	1 3/4	4 1/2	3 1/2	6 1/8	1 1/4	1/4	1/2	1/4	1 1/8	1/2	38
WW 8	8 1/8	1 3/4	4 1/2	4	6 3/8	1 1/4	1/4	1/2	1/4	1	3/8	40
WW 9	9 1/8	1 3/4	4 1/2	4 1/2	7 1/8	1 1/4	1/4	1/2	1/4	1	3/8	40
DWW 4 1/4	4 3/8	3 1/2	7	4 1/4	3 1/8	1	1/4	1/2	3/8	1 1/8	1/4	22
DWW 4 3/4	4 3/8	3 1/2	7	4 3/4	3 3/8	1	1/4	1/2	3/8	1 1/8	1/4	24
DWW 5	5 3/8	3 1/2	8	5	3 3/8	1 1/4	1/4	1/2	3/8	1	3/8	26
DWW 6	6 3/8	3 1/2	8	6	5	1 1/4	1/4	1/2	3/8	1	3/8	32
DWW 7	7 3/8	3 1/2	9	7	6 3/8	1 1/4	1/4	1/2	3/8	1	3/8	38
DWW 8	8 3/8	3 1/2	9	8	6 3/8	1 1/4	1/4	1/2	3/8	1	3/8	40
DWW 9	9 3/8	3 1/2	9	9	7 3/8	1 1/4	1/4	1/2	3/8	1	3/8	40
—	—	—	—	—	—	1.114	3/8	3/8	1/2	1	3/8	—
—	—	—	—	—	—	1 1/4	3/8	1/2	1/2	1 1/8	1/2	—

Write for Catalog Page 707-11

The LAU Blower Company, 2202 Home Ave., Dayton 7, Ohio
World's largest manufacturer of furnace blowers

35°N. DESIGN CONDITIONS Daily Temp. Range 20

Outside Temp. (°F) Summer 100 Winter

Inside Temp. (°F) 75 80 85 90 95 100

HOUSE: New Old Face: N NE E SE S SW NW

CONSTRUCTION: Walls: Heavy Masonry Light Masonry Brick Concrete Block Insulated Wood Siding Dark Color Light Color

SHADING: 24" ROOF OVERHANG TREES ADJACENT BLDGS. VIN. BLINDS AWNINGS

FLOOR: Wood Concrete Sub On Ground Insulated

ROOF: Wood Concrete Sub On Ground Insulated

WINDOWS: Double Hung Storm Sashes Weather Stripping

SERVICES: ELECTRIC: 220 Volts 60 Cycles 1 Phase GAS: NG, LP, Propane WATER: City 1050 GPM

UNIT LOCATION: Living Room Kitchen Bath

COOLING TOWER LOCATION: CITY WATER USED

AIRCooled CONDENSER LOCATION:

ABOVE: Survey form provides convenient method of determining pertinent data.

RIGHT: Cooling estimate is built up on this form.

CARRIER TWENTY-FOUR HOUR RESIDENTIAL COOLING ESTIMATE

Overall Size: Sq Ft: Cu Ft

ROOM NAMES

ROOM	WALLS	WINDOWS	FLOOR	ROOF	PEOPLE	COOKING	ROOM SENSIBLE HEAT	CFM	Supply Reg.	Rel. Gr.
LIVING RM	22	39	31	1810	18	700	10	390	8	310
DINING RM	26	10	260	20	640	111	260	111	260	12
KITCHEN	26	10	260	20	640	111	260	111	260	12
BED RM 1	26	10	260	20	640	111	260	111	260	12
BED RM 2	26	10	260	20	640	111	260	111	260	12
BED RM 3	26	10	260	20	640	111	260	111	260	12
BATH	26	10	260	20	640	111	260	111	260	12
Summary	12640	187	1900	1870	1440	1470	1460	1270	620	

NOTES:

Note 1. WINDOW heat gain = Factor (Table 1) x Quantity (Area in sq ft) = Btu/hr.

Note 2. WALL heat gain = Factor (Table 2) x Wall Shade Factor x Quantity (Lin ft of Perimeter) = Btu/hr.

Note 3. ROOF heat gain = Factor (Table 3) x Quantity (Area in sq ft) = Btu/hr.

Note 4. FLOOR heat gain = Factor (Table 4) x Quantity (Area in sq ft) = Btu/hr.

Note 5. PEOPLE heat gain = 360 x Quantity (Number of persons) = Btu/hr. (Living Room only)

SUMMARY

Sub Total Room Sens. Ht. = 12640 Btu/hr

Heat Gain to Ducts, Fan Heat = 187 1900 Btu/hr

Grand Total Sensible Heat = 14400 Btu/hr

Grand Total Heat = 634/2.75 = 19400 Btu/hr

EQUIPMENT SELECTION

Weathermaker

CFM = 30

Cooling Tower Size

CHECK FIGURES

Sq ft floor area per ton = 590

Sq ft wall and projected roof area per ton =

Calculating Residential Cooling Load--

(Continued from preceding page)

tween daily mean sol-air temperature corresponding to the outside design temperature and surface absorptivity of the wall and the daily mean room temperature (75°).

The effect of shading by roof overhangs on sunlit walls can be evaluated from the auxiliary table. These correction factors are weighed averages of all values for walls facing in any direction of the compass except north. For example, a dark colored insulated (2 in.) frame wall with 95° outside design temperature and 20° F. daily temperature range and with 24-in. roof overhang, would have a heat gain of $15 \times .81 = 12.2$

B.t.u. per hour per linear feet of perimeter.

For simplification, the wall perimeter exposed to the outdoors is used rather than area in square feet on the assumption that the average residential ceiling height would be approximately 8 ft. For other ceiling heights, the factors are, of course, proportional. For shaded walls or walls facing north, one half of the table value should be used. The so-called "window walls" are classified as glass. In measuring the wall perimeter, the window wall should be excluded.

Table 3 gives information on heat gain through sunlit roofs. The figures in the table are based on the over-all heat gain through the combined roof and ceiling.

FIGURING HEAT GAIN THROUGH FLOOR

Heat gain through the floor should be figured only when the room below is not air conditioned or when the underside of the floor is exposed to the outdoor temperatures. This would be the case in southern climates where houses are sometimes built on posts above the ground.

The heat load due to people or occupants is figured in terms of sensible heat only on the room by room cooling estimate. The heat is figured at 360 B.t.u. per hour per person. It is general practice to include the entire people load in one room, usually the living room. Normal number of household occupants is assumed to be equal to the number of sleeping accommodations.

The average daily heat gain from cooking, refrigerator, and various other appliances is estimated at 1,200 B.t.u. per hour. This quantity is added to the kitchen load. If there is a positive exhaust from the kitchen, half of this load should be deducted.

The sum of the components discussed above is added and entered under each particular room to give the Room Sensible Heat. When all rooms have been calculated, the Room Sensible Heats are totalled and

entered under "Summary" as Sub-total Room Sensible Heat. To this, 15% is added to compensate for the heat gain to ducts outside the air conditioned spaces and for the heat added to the air by the air conditioning unit fan.

The Grand Total Sensible Heat resulting is then divided by 0.75, which is the average sensible heat factor for a residential application, to give the Grand Total Heat.

FACTORS TO BE RECOGNIZED

In using the 24-hour method of heat gain estimating certain conditions already referred to must be recognized:

(1) The equipment must be operated long hours daily during maximum weather conditions. The thermostat setting must be kept low (72°

to 73° is recommended) in order that comfortable conditions will prevail during periods of maximum heat gain.

(2) There will be a fluctuation in inside temperature of approximately 6° in the hottest weather with a minimum temperature of 72° occurring during the early morning hours followed by a slow rise to a maximum of about 78° in the early evening when the instantaneous gain reaches its peak.

(3) The equipment selected by this method will be adequate for normal occupancy only. If large numbers of people are entertained in extreme weather, uncomfortable conditions may result. However, outlets in unused rooms may be closed to direct all cooling capacity into areas occupied by these people, in order to handle abnormal loads of this type.

(4) No outside air is normally introduced through the air conditioning unit. Infiltration through doors and windows is usually sufficient to satisfy the ventilation requirements for normal occupancy.

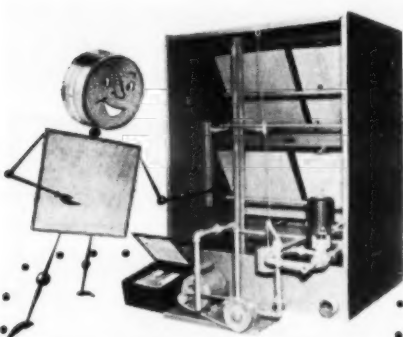
EXAMPLE OF AN ESTIMATE

The accompanying figures illustrate the estimating form applied to a single story residence with basement. The house is assumed to be at 35°N. latitude, the maximum design temperature is 100° F., and the daily temperature range is 20° F.

The house has dark colored shingle frame walls with 1 in. of wall insulation. The windows are double hung and shaded inside with venetian blinds. The pitched roof is of dark asphalt shingles; the ceiling below

(Concluded on next page)

Only FAR-AIR* gives you completely automatic air filtration with all these advantages!



FAR-AIR Self-Washing filters clean air better... provide these automatic features, too!

Washing, drying and oiling is controlled electrically on a pre-determined time schedule... automatically! Air cleaning efficiency remains constant. There is no liquid particle entrainment.

Water and dirt are flushed directly to sewer... automatically! There is no messy oil sump to collect sludge and create a fire hazard. Maintenance man-hours are reduced. Built-in controls guard against fire... automatically!

These are Far-Air features:

- No entrainment
- No sludge—no oil sump
- Automatic fire control
- Minimum maintenance
- Easy installation

FAR-AIR Self-Washing filters give you more efficient, more dependable service. That's because FAR-AIR's exclusive herringbone-crimp media design permits progressive loading and free air flow. Find out today about completely automatic air filtration.

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Farr Company, P. O. Box 10187 Airport Station Los Angeles 45, California
Please send me information on FAR-AIR Self-Washing filters. I would ☐ would not ☐ like a Farr Field Engineer to discuss my air filtration problem with me.

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Company _____
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Efficient operation makes a product easier to sell on one hand; builds solid customer satisfaction on the other. Precision engineering, only the best materials, skilled craftsmanship, and over 25 years experience in commercial and industrial refrigeration add up to higher efficiency for every Larkin product. And this means lower operating costs—important to buyer and seller alike.

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519 MEMORIAL DR., S.E. • ATLANTA, GA.



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True West Texas hospitality at its best—that's the Cactus Hotel. 250 comfortable guest rooms, ideal location and excellent food make the Cactus the number one choice of San Angelo, Texas.

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each of the guest rooms. Where quietness and reliability are of paramount importance, wise contractors install JE Solenoid Valves. This air-conditioning system was designed and installed by Decker and Roberts, contracting engineers, of Fort Worth, Texas.

ALL JE SOLENOID VALVES HAVE THESE FIVE MAJOR FEATURES OF DEPENDABILITY:

- Tight Seating—no bubble tolerance.
- Simplicity—only two moving parts.
- Long Life—cool coils.
- Durability—all corrosion-resistant material.
- Opening Pressure Differential—higher than most others on the market.

SEE YOUR LOCAL REFRIGERATION WHOLESALE, OR WRITE US TODAY FOR DETAILS



UNCONDITIONALLY GUARANTEED FOR 18 MONTHS

JACKES-EVANS MANUFACTURING COMPANY

Controls Division
4427 Geraldine Ave. • St. Louis 15, Missouri

Calculating Residential Cooling Loads--

(Concluded from preceding page)

is covered with 4 in. of flexible insulation or equivalent. The roof overhangs 24 in. on all sides. The floor is over an unconditioned basement which, however, is cool due to subgrade walls and floor and because the small windows in the area ways are kept closed. Four persons are assumed to occupy the home. The cooking operations are normal for this type of home.

The Grand Total Heat load is 19,400 B.t.u./hr. or 1.62 tons.

If the load had been figured by the instantaneous peak estimating method, the final figure would be 30,800 B.t.u./hr. or 2.56 tons, an increase of 59% over the load calculated by the 24-hour method.

EQUIPMENT SAVINGS ALONE MAY BE \$500

The advantages of the smaller equipment may mean a saving of \$500 in equipment alone. It also requires less dehumidified air quantity, therefore smaller ducts can be installed—a further saving.

The validity of this method has been checked by tests run last summer in two residences. One was located in New Orleans, the other in Dallas. Both houses called for the same cooling load and same size Carrier Weathermaker was installed in both. By selecting these houses the test instrumentation could be greatly simplified. Also, the results were comparable so that a check of one against the other could be made. Furthermore, both units were fully loaded, which was very desirable.

5-WEEK TEST PERIOD

The test period was five weeks, a large portion of which was ideal as far as outside design conditions were concerned.

The instrumentation was as nearly complete as possible. It consisted of a 16-point recording potentiometer, recording watt meter, kilowatt-hour meter, compressor operating time clock, recording suction and discharge pressure gauges, condenser water flow meter, pyrheliometer to record solar intensity, cooling coil condensate recorder, wet-bulb indicators, and many auxiliary instruments.

The potentiometer recorded the outside and inside wet and dry bulb temperatures and those in the main return and discharge air stream. It also recorded the entering and leaving condenser water temperatures as well as the sun's energy.

The recording watt meter gave an instantaneous record of power drawn by the compressor. The kilowatt-hour meter showed the total power used by compressor, fan, and cooling water pump.

A calibrated orifice in the condenser water line and manometer supplied information on the amount of water that passed through the condenser of the refrigeration machine. Since the entering and leaving temperatures of the water were recorded, the quantity of heat removed from the condenser could be readily determined. This heat is, of course, equal to the heat removed from the house plus a small amount of heat equivalent to the power necessary to drive the refrigeration compressor. Since this power was

constantly measured, its heat equivalent was also made available.

Consequently, the difference between the heat rejected to the condenser and the electric power expressed in heat units is the heat gain to the house. From the recorded data the total heat gain to the house for 24 hours can be computed. Dividing this by 24 gives the 24-hour cooling load of the residence on a "per hour" basis.

COMPARISON OF FIGURES SHOWS SOUNDNESS OF 24-HOUR METHOD

In comparing the calculated heat gain of the test residence with the load figures arrived at by tests, only that portion of the data was used which corresponded to a number of successive days of maximum outdoor conditions. For 35 to 40% of this period the estimated heat gain fell about 4% short of the actual heat removed. For another 40% of this period it was 5% on the high side and for 20% of the time the method checked the results exactly. Even if allowance is made for possible errors in the observations and calculations the average of the test results has proved the soundness of the 24-hour estimating method.

The inside room temperature variation followed the expected pattern. The low limit of 72° F. was observed in the morning between 6 and 8 o'clock. The temperature gradually climbed to 78° F. which it reached about 12 hours later. The room relative humidity hovered between 48 and 55% during this period. The occupants were not conscious of the variations in room conditions and expressed their utmost satisfaction and comfort.

SENSIBLE PORTION OF HEAT GAIN IS 75% OF TOTAL HEAT GAIN REMOVED

The sensible portion of the heat gain due primarily to solar gain and transmission which affects the room temperature only, could also be determined from the test records. This is the heat removed from the circulated air in lowering its temperature from room temperature to that of the refrigerated coil surface. It was found that this heat is about 75% of total heat gain removed by the refrigeration system.

The sensible heat factor (SHF) or ratio of the sensible heat to total was determined experimentally as follows: A condensate measuring device collected the moisture condensed on the coil and recorded the amount at regular time intervals. Since a certain amount of heat must be removed for each pound of water so removed, the amount of condensate can be converted to a heat equivalent. This latent heat was found to be about 25% of the total. The sensible heat factor or the ratio of the sensible heat to total heat is, therefore, 0.75.

The air quantity delivered by the Weathermaker was varied during the tests. It was found that 400 cu. ft. of air circulated for each ton of cooling effect produced most satisfactory and uniform conditions within the air conditioned spaces. The low air quantity induced long operating cycles of the compressor which were desirable for maintaining ideal humidity conditions in the rooms. The low air quantity also maintains the sound level of the apparatus at a low value.

CONCLUSION

In conclusion, it is believed that the 24-hour method of estimating residential cooling requirements will become an invaluable tool in the hands of the builder and air conditioning engineer. It offers a reliable guide to selecting exactly the right size of equipment for the usual residential job and will reflect favorably

Table 2—Heat Gain Through Sunlit and Shaded Walls

(B.t.u./hr. Per Linear Ft. of Exposed Perimeter)

Daily Temp. Range (F.)	Wall Construction	U	Outside Design Temperature (F.)							
			90		95		100		105	
			Light	Dark	Light	Dark	Light	Dark	Light	Dark
15	Insulated Frame (1" Ins.)	.14	14	18	20	24	27	31	34	38
	Frame or Heavy Masonry (2" Ins.)	.10	10	13	14	17	19	22	24	27
	Light Masonry	.31	28	34	36	46	48	59	60	71
20	Insulated Frame (1" Ins.)	.14	10	14	17	21	24	28	31	34
	Frame or Heavy Masonry (2" Ins.)	.10	7	10	12	15	17	20	22	24
	Light Masonry	.31	18	28	30	40	43	52	55	65
25	Insulated Frame (1" Ins.)	.14	6	11	14	18	20	24	27	31
	Frame or Heavy Masonry (2" Ins.)	.10	4	8	10	13	14	17	19	22
	Light Masonry	.31	9	22	24	34	36	46	49	59

NOTES:

Based on 8 ft. wall height.
For north or shaded walls, use ½ value in table.
Wall adjoining attic space should be taken as roof.
Wall adjoining unconditioned space should be included as shaded wall.
Wall construction listed as ordinarily encountered in residences. The heat gain factor is directly proportional to the heat transmission coefficient (U).

WALL SHADE FACTORS FOR VARIOUS LENGTH ROOF OVERHANG (Multiply Values in Table 2 by Factors Below)

Roof Overhang (in.)	12	24	36	48
Factor	.90	.81	.72	.68

Shading due to roof overhang applies to single story house. For two-story home, figure shading for second floor, none for first floor.

Table 3—Heat Gain Through Sunlit Pitched Roofs

(B.t.u./hr. Per Sq. Ft.)

Daily Temp. Range (F.)	Roof Insulation U	Outside Design Temp. (F.)			
		90	95	100	105
15	None	32	8.8	11.0	14.3
	1 in.	.15	4.4	5.5	7.7
	4 in.	.09	2.4	2.9	3.8
20	None	.32	7.8	9.7	13.4
	1 in.	.15	3.9	4.8	6.7
	4 in.	.09	2.1	2.6	3.6
25	None	.32	6.9	8.7	12.5
	1 in.	.15	3.5	4.3	6.2
	4 in.	.09	1.9	2.4	3.3

NOTES:

Pitched roof area is taken as the area projected on a horizontal plane, i.e. ceiling area.

No positive ventilation in attic.

For insulated flat roof increase values in table by 50%.

For flat, white marble chip roof use values from table.

Roof construction listed as ordinarily encountered in residences. The heat gain factor is directly proportional to the heat transmission coefficient (U).

For floor over unconditioned space, 2 B.t.u./hr. per sq. ft.

No heat gain through floor over cool basement, crawl space or concrete slab on ground.

For floor with underside exposed to outside air, 4 B.t.u./hr. sq. ft.

not only in economy but in a quality of performance which cannot be approached by any other method of comparable simplicity. The use of the form offered here also reduced the number of hours required for engineering calculations to a small fraction of the time required by other methods of equivalent accuracy.

Farrington Buys Houston Air Conditioning Concern

HOUSTON, Texas—Robroy C. Carroll, general manager for the Farrington, developer and builder, has purchased the outstanding stock of Airtex, Inc., an air conditioning contracting firm at 1007 Waugh Drive, which is also a Houston dealer for Chrysler air conditioning and heating equipment.

He also announced the appointment of A. B. Rogers as the new manager of sales for Airtex.

James E. Holton is acting general manager of the Airtex reorganized operation. Harry C. Campbell is manager of the service department, and James N. Lestos, Jr., is chief engineer.

Charter Air Conditioning Firm

BRANDON, Miss.—Mississippi Insulating Co., Inc., to handle air conditioning and heating, has been granted a charter of incorporation listing capital stock of \$5,000.

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TYPHOON AIR CONDITIONING CO., Inc.
794 Union Street, Brooklyn 15, N. Y.

Genuine Joe says:
"Always buy Genuine WAGNER Brushes"

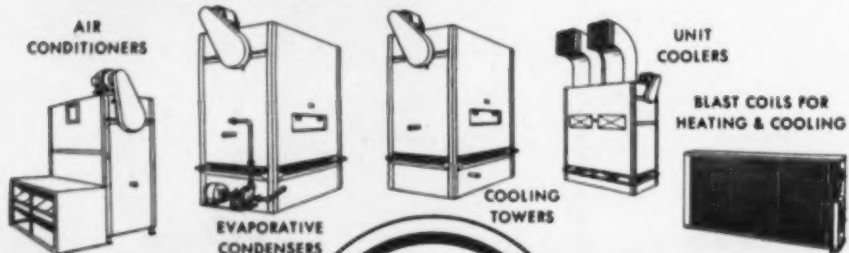
Replace brushes in Wagner Motors with genuine Wagner brushes because Wagner correct grade brushes give maximum performance, commutator and brush life. Identify them by the name WAGNER on the brushes.

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If you want a package deal that will do a better job of air conditioning for you choose Governair! Sized from 3 to 60 tons. GOVERNNAIR CORPORATION, 513 N. Blackwelder, Oklahoma City, Okla.

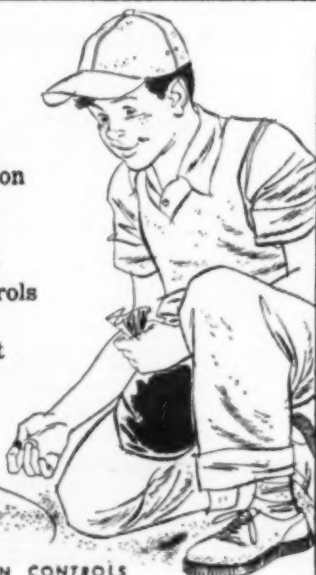


GOVERNNAIR

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS!

PERFORMANCE is the payoff!

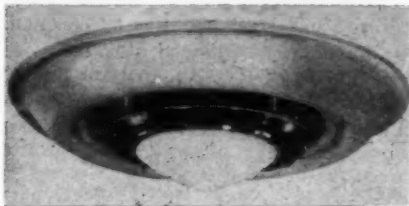
You're playing for keeps in the refrigeration service business. That's why you must be sure when you select controls. One fact is obvious — you can't go wrong with Ranco — maker of over 50,000,000 refrigeration controls in actual use today. And you don't have to hunt for the right control — not if you visit your Ranco dealer first. Ranco controls are available for more than 4,000 replacement installations!



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What's New

When requesting further information on new products, please use "Information Center" form.



Connor Adds Combined Diffuser, Light Fixture

KEY NO. C-440

DANBURY, Conn. — A combined diffuser and recessed conical lens lighting fixture for use in any room in the house is a recent addition to Connor Engineering Corp.'s line of ceiling air diffusers for residential heating and cooling.

This model (KH-L Recessed) is furnished complete and is made in several sizes or neck diameters, ac-

commodating 100 to 200 watt bulbs. Heating capacity ranges from 7,000 to 23,000 B.t.u. per hour and cooling from 80 to 350 c.f.m.

For other types of lighting fixtures, diffusers fitted with mounting brackets are available.



New Cooking Top Added to Thermador 'Bilt-In' Range



KEY NO. C-442

LOS ANGELES — A new cooking top design was recently added to the Thermador line of "bilt-in" ranges, the Thermador Electrical Mfg. Co. has announced. It incorporates two quick-heating electric cooking units with stainless steel finish, and individually controlled by five heat reciprocal switches. Neon indicator light glows when any unit is on.

The 13 1/2 in. by 20 3/4 in. units can be installed individually, in pairs.

Free-Flow Filter-Drier Has Fiberglass Depth Filter



KEY NO. C-443

ZELIENOPLE, Pa. — The Remco "Super-Flo," a new free-flow filter-drier designed to meet requirements of both air conditioning and refrigeration systems, combines in a low price unit a Fiberglass depth filter, a molded drying element, and a spun-end copper shell, Remco, Inc. has announced.

The Fiberglass bag in the Super-Flo removes amounts of foreign matter from the refrigerant stream in excess of any quantities which could ever be found in operating systems, the company said. In tests, 100 drops of crank-case sludge injected directly into the stream were completely removed on the first pass through a 1-ton Super-Flo, Remco claims. As a safety bonus, a 30 by 150 mesh Dutch weave outlet filter stops all particles larger than .0046 in.

The molded "Remeal" drying unit removes moisture both chemically and physically, also adsorbing acids to a level below possible danger from corrosion. Chemically absorbed moisture is retained in the drying element even though temperatures rise to 150° F.

There is no pressure drop through the Super-Flo Filter-Drier because of

the design of the flow channels and flow gradators and the availability of the massive glass fiber for filtering, the manufacturer declared. Flow channels permit the refrigerant to flow in direct contact with the drying agent for fast moisture removal.

Super-Flo filter-driers are available in sizes up to 5-ton.



Frick Adds 3-Ton Unit Air Conditioner to Line

KEY NO. C-444

WAYNESBORO, Pa. — Frick Co. announces the addition of a new 3-hp. size to its line of unit air conditioners.

Frick unit air conditioners, first introduced 15 years ago, were already available in 5 and 7 1/2-hp. sizes.

Features of Frick units include large cooling surfaces, insulated condensers, and substantial cabinets.



Stop service calls . . . keep out rust and sludge . . . open new doors to sales acceptance! — with coolers, ice-makers, sell "Taste-Master" — checks chlorine, traps sediment; promotes service-free satisfaction with all water processing appliances. Write—

Filtrine MANUFACTURING CO.
BROOKLYN 38 • N. Y.
"Water Coolers and Filters for 40 Years"

20-Year Guarantee on Cooling Tower Deck

KEY NO. C-441

PITTSBURGH — A new residential cooling tower, designed and priced for home and small building air conditioning, and carrying with it the Halstead & Mitchell 20-year guarantee on the wetted deck surface, has been placed on the market by Halstead & Mitchell. Units range in size from 2 through 7 1/2 tons.

The 20-year guarantee against rotting, and resistance to attack by fungi, is made possible by Halstead & Mitchell's exclusive use of pressure-treated creosoted wood for the decking surface. Over 153 toxic elements in the treatment give the specific assurance of long life.

The gravity-type distributing pan on these residential cooling towers eliminates the extra pumping head required on spray type towers, and cuts down windage losses due to atomizing of water, the company says. More than 97% of the cooling water is saved and recirculated.

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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Evaporative Condensers

Their Selection, Installation, Maintenance

Editor's Note: The eight previous instalments in this series have dealt with the theory, selection, installation, and operation of evaporative condensers. This and succeeding instalments will cover the all-important problem of maintenance.

"Evaporative condensers, due to the nature of their operation, are subjected to the heaviest corrosion and deterioration of almost any other equipment used in refrigeration systems," points out the author in the booklet from which this series has been taken with permission.

Thus it is essential that evaporative condensers receive proper maintenance regularly.

By John Engallicheff, Jr., President, Baltimore Aircoil Co., Inc.

GENERAL INFORMATION

The amount of service required to maintain an evaporative condenser is determined primarily by the condition of the air and water in the locality of the installation and also by the average hours of operation per day.

The atmospheric conditions and

water conditions are so varied throughout the country that it is practically impossible to give detailed instructions to cover all installations. Consequently, we will try to point out those conditions which are harmful to the evaporative condenser and leave to the judgment of the individual maintenance personnel the

degree to which they are present on a particular installation.

The most harmful atmospheric conditions are those in which the following impurities are found:

- (a) Industrial smoke.
- (b) Chemical fumes.
- (c) Salt.
- (d) Heavy dust.

The most harmful water conditions are those in which the water has a high concentration of mineral impurities which precipitate out on the coil during evaporation.

The concentration of impurities in the air and water is the primary factor in determining the extent of their effect, because all of these impurities can be present in weak concentration without seriously affecting the life of the evaporative condenser.

WASTE WATER

The average condenser evaporates water at the rate of the entire content of the sump tank in two hours of operation. While water is evaporated, the impurities, which were originally in the water, remain in the sump tank.

Consequently, the concentration of any impurities present in the original water supplied to condenser are

doubled after the first two hours of operation. The increase in the concentration of these impurities continues indefinitely as long as the condenser is in operation and as long as the water is strictly recirculated.

IMPURITIES INCREASE

It is not an uncommon practice for the condenser to operate from start to end of season without being drained. The average condenser has 1,500 hours of operation through the season and, if the water is strictly recirculated, the concentration of impurities at the end of the season will be 750 times the concentration found in the original water supply.

In addition, should any fumes be present in the air, such as found in downtown and industrial areas, or salt condition found on, or near, the seashore, these impurities are washed out of the air by the spray water and, if water is strictly recirculated, accumulate in the sump water, often forming very corrosive and deteriorating solutions.

To prevent the building up of excessive concentrations of impurities, as described above, B.A.C., Inc. recommends the wasting of circulated water at a rate at least equal to the

rate at which water is evaporated in the condenser, thus keeping the circulated water at, or near, the condition of the water originally supplied to the condenser.

With very few exceptions, water supplied in its original condition to condenser has very little harmful effect on the condenser.

To make this water waste automatic and not wasteful, B.A.C. provides a waste water pan proportioned so the waste equals the evaporation of the water when the condenser operates at base rate conditions.

WASTE WATER PAN

The waste water pan is the small pan directly over the overflow and discharging into the overflow. It has no moving parts and consequently requires little attention other than to see that it has not become clogged up with dirt. The purpose of the waste water pan is to remove some of the water from the sump tank every time the pump runs so as to reduce the concentration of impurities in the sump water caused by continued evaporation and recirculation of the water.

It is recommended that this pan (Continued on next page)

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The REFRIGERATION AND AIR CONDITIONING DIRECTORY is read and consulted regularly by more than 15,000 key buyers in every part of the refrigeration and air conditioning industry—manufacturers, architects, engineering and installation firms, servicing men, distributors, dealers, manufacturers, agents, jobbers, exporters and importers. The DIRECTORY is on the desks of all purchasing agents you want to influence.

Why Is It Published Yearly?

The refrigeration and air conditioning industry is expanding more rapidly now than ever before in its history. Personnel turnover is considerable. The many new companies, products, and people entering this industry make the DIRECTORY an essential yearly service. Thousands of buyers in the industry make almost daily use of this reference book. They rely on it for current information.

The Refrigeration and Air Conditioning Directory published by *Air Conditioning & Refrigeration News*
450 WEST FORT STREET DETROIT 26, MICHIGAN

Evaporative Condensers --*(Continued from preceding page)*

be kept in operation at all times and that it be allowed to discharge into the overflow a quantity of water equal to that evaporated on the condensing coil.

The condensing coil will evaporate approximately 2 gals. per hour per condenser number. For example, a #20 condenser would evaporate about 40 gals. of water per hour plus 40 gals. per hour through the waste water pan or would require a total of 80 gals. per hour for its operation. The water which is wasted through the waste water pan will more than pay for itself in extending the life of the evaporative condenser.

However, if conditions of water or air, or both, are so adverse that water waste cannot take care of the harmful effect of accumulated impurities, then the use of water treatment is recommended.

There are a number of chemical compounds on the market which can be purchased and self administered or there are water treatment companies whose business is either to

recommend chemicals to be used or undertake the maintenance of chemical treatment under a contract basis to combat local conditions.

In any case, it should be ascertained that the chemical used is not harmful to galvanized coating used as rust preventative in B.A.C. condensers.

*(To Be Continued)***Farr Expands Territory Of N. J. Representative**

LOS ANGELES—Farr Co., manufacturer of "Far-Air" filters and air filtration equipment, has expanded the territory served by its New Jersey representative, A-C Products Co. of Paterson, to include the metropolitan New York area, according to J. D. McCampbell, Farr sales manager.

The company, which maintains a filter servicing operation in Paterson, will also handle sales and servicing of Farr equipment in the newly-assigned area. Offices are being opened in New York City by the representative to facilitate operation of the enlarged territory, it was announced.

Dunbar, Bixby Named to New Posts with G-E Div.

LOUISVILLE, Ky. — J. Watson Dunbar and Carl L. Bixby, Jr. have been appointed merchandising manager and sales training manager, respectively, for the sales education programs and materials section of General Electric Co.'s Major Appliance Div.

Dunbar, who has been in charge of sales planning and merchandising for the household refrigerator department, assumes responsibility for the planning and development of all divisional merchandising programs.

He joined the company's lamp division in Cleveland, 1917, shortly after graduation from Western Reserve university. Since then, he has served in a number of advertising and promotion capacities in Cleveland, New York, Bridgeport, and Louisville.

Bixby will be responsible for the planning, development, and production of all divisional sales training activities. He has been active in various sales training functions since he joined the company in May, 1948.

Admiral Wins Trademark Appeal, Warns Others

CHICAGO—Admiral Corp. has announced its intention to take action against other trademark infringers, following the upholding in the U. S. Court of Appeals of a lower court decision against Penco, Inc., for using the name Admiral.

The U. S. District Court, Rochester, N. Y., had granted a permanent injunction against Penco's use of the name Admiral on household appliances and related goods. Admiral Corp. also was awarded \$2,000 for attorney's fees in addition to court costs.

The Court of Appeals for the second circuit upheld the decision in its entirety and awarded Admiral additional attorney's fees and court costs for the appeal.

Penco, a subsidiary of Price Vacuum Stores, Inc., Philadelphia, was found guilty of infringing Admiral's trademark and also of unfair competition in the distribution and sale of vacuum cleaners and sewing machines under the Admiral name.

Super-Cold Export Mgr. To Visit 70 Countries

LOS ANGELES — Around the world in 90 days with stopovers in 70 countries! That's the whirlwind selling trip planned by Norman W. F. Klein, director of exports for Super-Cold Corp., manufacturer of commercial refrigeration and air conditioning equipment.

Klein left this week via Pan American Airways with Honolulu as his first stop.

He will visit Hawaii, Japan, north, central, and south Africa, central and south America, the major countries in Europe, the Near East, and the Far East. He will tell customers and prospects about the refrigeration and air conditioning equipment manufactured by Super-Cold, assist present distributors and customers in their installation and operating problems, and establish new distributors and sales outlets.

Klein, well-known in European industrial circles, was born in Holland and formerly was connected with a major American oil company at The Hague.

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The 1954 edition of THE REFRIGERATION AND AIR CONDITIONING DIRECTORY will be ready for initial distribution to the thousands of buyers attending the All-Industry Exposition in Cleveland November 9-12, 1953.

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For Service and Installation Engineers



Paul Reed

Conditions Affecting Capacity of a Condensing Unit (2)

CAPACITY RATING OF SMALLER CONDENSING UNITS

The capacities of the smaller condensing units of about 20 tons or less capacity are usually stated in B.t.u. per hour instead of tons per day. Moreover, several capacities are stated for various evaporator temperatures and condensing conditions, rather than at only 5° evaporator temperature and 86° condensing, for standard ton conditions.

The condensing units are divided into three classifications depending upon the evaporator temperatures with which they are to be used, but each of the three having the same horsepower motor.

THREE CLASSIFICATIONS

Low temperature units, -25° to 0° F. High temperature units 25° to 45° F. Capacities in B.t.u. per hour are given for each of these three clas-

sifications of units, but not just at one evaporator temperature. Usually, the manufacturer gives the capacity of the unit for several evaporator temperatures in steps of 5°.

For the low temperature units, he might give six capacities of the unit for six evaporator temperatures, -25°, -20°, -15°, -10°, -5°, and 0°. For the medium temperature units, at 0°, 5°, 10°, 15°, and 25°, and possibly at -5° also. For the high temperature units, he would probably give capacities at 25°, 30°, 35°, 40°, and 45°.

STANDARD RATING CONDITIONS

1. **Evaporator temperature.** In each classification, the capacity is greater the higher the temperature of the evaporator on which it is used.

The same size motor is used on each of the three classifications of units, and the motor wattage is about the same. This is because the displacement of the low temperature unit is greater than that of the medium temperature unit; and the displacement of the medium temperature unit is greater than for the high temperature unit.

With belt-driven units, the same compressor can often be used on all three classifications of units by varying the compressor r.p.m. by means

of pulley ratios. For hermetic or other direct drive compressors, the difference in displacement is effected by varying the bore and/or stroke, or by using a different number of cylinders.

The purpose of having the three classifications for each horsepower is to take advantage of the full horsepower of the motor. Otherwise, if the motor were loaded on the basis of the displacement for 25° to 45° evaporators, it would be but little more than one-half loaded if used on -25° to 0° evaporators.

On the other hand, if the motor were loaded on the basis of the displacement for -25° to 0° evaporators, it would be heavily overloaded if used on evaporators above 0°.

In addition to using different compressor displacements for each of the three classifications, different condensers must be used, for the high temperature unit with its relatively large compressor displacement must condense more refrigerant than the medium temperature unit, and therefore requires a larger condenser. The same is true of the medium temperature and low temperature units.

2. **Superheat of the suction gas.** Not only is it hard on the compressor to operate "Freon" and methyl

chloride condensing units with little or no superheat in the suction gas entering the compressor, but it is not feasible in ordinary use.

If the suction gas is at or near the evaporator temperature, the suction line will frost or "sweat" most of the time, for even with a 45° evaporator, the suction line would be below the dewpoint temperature of the air.

This sweating would be objectionable to the user and water dripping from the suction line might damage merchandise or furnishings.

Therefore, it is standard practice to rate these condensing units on the basis of a 65° temperature of the suction gas entering the compressor of water-cooled units, and 80° for air-cooled units, regardless of the evaporator temperature.

Allowing this much superheating of the suction gas reduces the rated capacities of the condensing units from what they would be with less or no superheating, but it is realistic and in line with the usual and, in fact, necessary practice in the application and use of the units.

3. **Condensing temperature.** Unlike the standard ton, the ratings for the smaller units are not based on a given or fixed condensing temperature.

Instead, the air-cooled units are rated according to the air temperatures or "ambient temperatures," as they are also referred to, of the rooms in which these air-cooled units are to be used.

The standard ambient temperature is 90° F, but most manufacturers show capacities for their air-cooled units in 80° and 100° rooms, also. Thus, the manufacturer's rating table for an air-cooled medium temperature unit might show 21 different B.t.u. per hour capacities, 7 for each of 3 room temperatures.

Usually the condensing temperature of an air-cooled unit is about 30° to 35° higher than the temperature of the room air, and the condensing pressure is then the pressure at saturation corresponding to the condensing temperature.

Instead of publishing actual capacities for their air-cooled units at 80° and 100°, some manufacturers give a factor, usually about 7% for each 10° variation in room temperature above or below the capacities given for 90° rooms. Thus, the capacity in an 80° room would be 7% greater, and for a 100° room, 7% less than the capacity shown for the 90° room.

Water-cooled condensing units are rated according to the temperature of the water entering and leaving the condenser; or putting it another way, for several available cooling water temperatures and with a certain number of degrees rise in the temperature of the water as it passes through and leaves the condenser.

75° F is considered the standard inlet water temperature, but most manufacturers also show capacities for two or three other inlet water temperatures such as 65° and 85°. Some manufacturers rate their water-cooled units on the basis of one temperature (95° for example) for the water leaving the condenser, with entering water 10° to 30° below the leaving temperature.

This is a simpler method than showing a number of ratings for several entering water temperatures and several temperature rises of the water passing through the condenser.

Whatever the method, most manufacturer's rating tables for water-cooled units are based primarily on water temperatures rather than di-

rectly on a fixed condensing temperature, although the effect is similar.

4. **Temperature of the liquid refrigerant.** Ordinarily, the condensing unit manufacturer does not specify the temperature of the liquid refrigerant leaving the condensers or receivers of his condensing units.

The liquid temperatures may vary considerably with the loading, suction pressure, condenser size, design, and cleanliness. Moreover, there is some cooling in the liquid line, and of course this is particularly true if a heat-exchanger is used between the liquid and suction lines.

Liquid refrigerant temperatures leaving water-cooled condensers are usually about 8° to 10° above leaving water temperatures. Liquid refrigerant temperatures leaving air-cooled condensers are usually about 15° above room temperatures.

CAPACITY TABLES DETERMINED BY ACTUAL TESTS

The manufacturer of the condensing unit determines the published capacity data from actual tests run on his various models at various conditions of room temperatures, etc.

From those actual tests, his engineers can calculate efficiencies; but it would be extremely risky for the manufacturer to publish capacity data on the basis of estimated efficiencies. They vary so much according to conditions and even between models that appear to be similar, that he could not afford to publish data except on the basis of actual tests. Even then, there is some variation in the efficiencies and capacities of machines of the same model on his production line, and which are exactly alike except for variation in tolerances, fits, etc., in actual machining and assembly. Such variations are usually less than 5%.

In summary, it can be said that in order to determine the capacities of condensing units under varying conditions, the manufacturers' rating tables should be consulted.

If the unit is old, noisy, and otherwise shows evidence of considerable wear, it is well to make some allowances for reduction in efficiency and capacity as a result of wear. If the unit is in reasonably good operating condition, it is not likely that it has deteriorated more than 10%.

Quite often, wear of pistons, rings, and cylinders does not affect the efficiency and capacity as much as wear of bearings that cause increased clearance volume, or corrosion or pitting of suction or discharge valves that result in leakage of gas past these valves.

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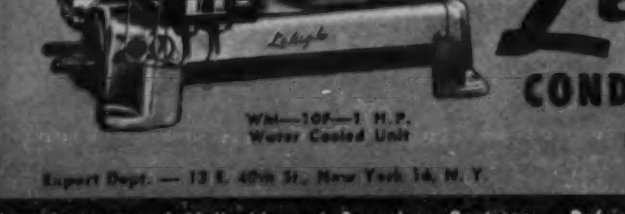
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Sizes from 1/4 h.p. to 1 1/2 h.p. The smallest makes 2520 deluxe size cubes daily. The largest delivers 10,000 per day. Pull out storage cabinets hold from 8 to 12 hrs. production.

THE ORIGINAL Solid-Cube Ice Maker for Hotels, Restaurants, Clubs, Bars, Cafeterias, Schools, Hospitals, Institutions, Drug and Chain Stores.

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DETAILED INFORMATION

Esmond Manufacturing Company

ESMOND RHODE ISLAND

(SINCE 1947)

NEMA Freezer Sales for First 2 Months Set Fast Pace with 78% Gain over '52; 83,494 Sold In Feb.

Summary for February and First Two Months, 1953
Electric Farm and Home Freezers—Complete—Sales by Sizes—Units

Farm and home freezers complete with high and low side and cabinet, where 50% or more of the net cabinet capacity is designed for the freezing and/or storage of frozen foods.

FEBRUARY (25 Companies)

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 5 cu. ft.	85	6	2	83
2. 5 and 6 cu. ft.	787	146	199	933
3. 7 and 8 cu. ft.	4,994	101	75	5,294
4. 9 and 10 cu. ft.	5,898	7	75	5,980
5. 11 and 12 cu. ft.	17,692	921	208	18,821
6. 12.5 to 17.4 cu. ft.	26,586	1,614	88	28,288
7. 17.5 to 21.4 cu. ft.	19,234	476	48	19,758
8. 21.5 to 30.4 cu. ft.	4,136	18	9	4,163
9. 30.5 to 40.4 cu. ft.	158	5	1	164
10. 40.5 to 50.4 cu. ft. . . . .	.....	.....	.....	.....
11. 50.5 to 60.4 cu. ft. . . . .	.....	.....	.....	.....
12. 60.4 cu. ft. and over . . . . .	.....	.....	.....	.....
Total—All Models	79,570	3,148	776	83,494
Total Upright Models (Included in above)	10,987	480	68	11,535

FIRST TWO MONTHS (25-24 Companies)

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 5 cu. ft.	164	6	43	213
2. 5 and 6 cu. ft.	1,265	220	1,485	2,965
3. 7 and 8 cu. ft.	10,129	407	340	10,876
4. 9 and 10 cu. ft.	9,705	27	204	9,936
5. 11 and 12 cu. ft.	36,038	1,607	230	37,875
6. 12.5 to 17.4 cu. ft.	58,071	3,174	155	61,400
7. 17.5 to 21.4 cu. ft.	37,643	907	103	38,653
8. 21.5 to 30.4 cu. ft.	7,736	93	9	7,838
9. 30.5 to 40.4 cu. ft.	325	5	1	331
10. 40.5 to 50.4 cu. ft. . . . .	.....	.....	.....	.....
11. 50.5 to 60.4 cu. ft. . . . .	.....	.....	.....	.....
12. 60.5 cu. ft. and over	1	.....	.....	1
Total—All Models	161,077	6,226	1,305	168,608
Total Upright Models (Included in above)	20,997	721	77	21,795

Participating companies: Admiral Corp. (In 2-1-53); Bendix Home Appliance Div., Avco Mfg. Corp. (In 1-1-53); Ben-Hur Mfg. Co.; Carrier Corp.; The Coolerator Co.; Crosley Div., Avco Mfg. Corp.; Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. General Electric Co.; International Harvester Co.; Kelvinator Div., Nash-Kelvinator Corp.; A. J. Lindemann & Hoverson Co.; Masterfreez Home Locker Mfg. Co.; The Maytag Co.; Norge Div., Borg-Warner Corp.; Philco Corp., Major Appliance Div.; Revco, Inc.; Quicfreez, Inc. (formerly Sanitary Refrigerator Co.); Ryan Industries; Seeger Refrigerator Co.; Victor Products Corp.; Westinghouse Electric Corp.; Wilson Refrigeration, Inc.; Schaefer, Inc.; Emil Steinhurst & Sons, Inc.

Freezer Sales--

(Concluded from Page 1, Column 2)

first quarter of 1952. Sales in February 1952 numbered only 50,127.

Though domestic sales of freezers dropped slightly from January to February, sales to Canada and other foreign countries increased somewhat. Canadian sales rose from 3,078 in January to 3,148 in February. Sales to other foreign countries increased from 529 units to 776.

A larger proportion of total sales during February were in upright models than in January. Uprights sold numbered 11,535 in February and 10,217 in January.

NEMA reported that figures from Admiral Corp. were included for the first time in the February totals.

Cornell Named Executive Asst. To A. O. Smith Pres.

MILWAUKEE—Appointment of F. S. Cornell as executive assistant to the president of the A. O. Smith Corp. is announced by president L. B. Smith recently.

Cornell, who takes the new post immediately, also will continue his responsibility as manager of the Permaglas-Heating Div. at Kankakee, Ill. A four-man committee of department heads will administer the Kankakee operation under Cornell's direction.

These men are R. S. Friend, works manager; W. W. Higgins, chief engineer; S. E. Wolkenheim, general sales manager of the division, and D. J. O'Connell, business administration.

IT'S A GEM!

Dealers and users are excited about Gem Refrigerators . . . custom features, competitively priced, by a maker 30 years in the business. It's a terrific deal! Rich, New Territories Open. Write today!



GEM REFRIGERATOR CO.
165 W. Wyoming Ave., Phila. 40, Pa.

Thor Lines--

(Concluded from Page 1, Column 3)
the built-in oven and separate surface burner type, they should not conflict with conventional range lines, Hurley said.

The refrigerator line consists of three models—an 8.7-cu. ft. model at \$339.95; a 10.35-cu. ft. model at \$349.95; and a 10.35-cu. ft. custom built model with automatic defrosting and extra convenience features, at \$429.95. Later in the year the company will probably introduce a "leader" refrigerator model at less than \$230.

The freezer line consists of three chest models—a 9 cu. ft. at \$359.95; a 15 cu. ft. at \$479.95; a 22-cu. ft., two-lid model at \$659.95, plus an 11-cu. ft. upright model, planned for later introduction.

New washer models introduced, include a new fully automatic unit at \$299.50; and a semi-automatic at \$239.50.

To introduce its lines, Thor is sending a theatrical production on the road. Next stop is New York City where it will be seen on April 27. On April 30 the production will appear in Atlanta and then in Dallas on May 4, and San Francisco on May 8.

Thor General Sales Manager T. R. Chadwick estimates that more than 600 distributor representatives will see the show before it closes. Professional models and Thor product managers make up the cast. The production uses a series of skits based on TV audience participation shows. These include "You Bet Your Wife," "Zoo Parade," and "That's My Line."

Blackwell Covers Western Canada for Deepfreeze

NORTH CHICAGO — Lynn W. Blackwell has been named western Canadian district manager for Deepfreeze, according to Ben G. Sanderson, general sales manager.

Blackwell will work with Sylvester J. Seibert who last August was placed in charge of Canadian field operations for Deepfreeze, Sanderson said. For the past two years, Blackwell has been a member of the sales staff of Burgess Battery Co. at Niagara Falls, Ontario. From 1945 to 1950 he was on the sales staff of J. H. Ashdown Hardware Co., Regina, Saskatchewan.

Deepfreeze distributors Blackwell will work with include Taylor, Pearson & Carson, Ltd., Calgary, Alberta; Taylor & Pearson, Ltd., Edmonton, Alberta; Taylor & Pearson (BC) Ltd., Vancouver, B. C.; Ward Johnson Electric Co., Ltd., Regina, Sask.; and W. J. Electric Co., Ltd., Saskatoon, Sask.

SMI Convention Program--

(Concluded from Page 1, Column 3)

Hill & Co., Hussmann Refrigeration, McCray Refrigerator, Sherer-Gillett Co., Tyler Fixture, Typhoon, and Weber Showcase.

The convention will open formally at noon Sunday, May 24, with a "brunch" for delegates, following which the exhibits will be opened.

First business Monday will be devoted to advertising and promotion methods, including a simulated merchandising committee meeting of Wrigley Stores, Inc., Detroit supermarket chain.

A rapid-fire view of what supermarkets are doing in the way of expansion, in extending self-service, and in such vital trends as store hours will be presented at the Tuesday morning session on "Better Store Operations." The Department of Agriculture survey will be discussed.

Final business session Wednesday morning will take up various problems of employee relations and personnel management.

As usual, numerous entertainment features are planned for the convention, with the highlight being the appearance of Bob Hope and a strong supporting cast.

Major features of the business sessions have been scheduled as follows:

MONDAY, MAY 25

Theme: "How to Sell More—Profitably Through Better Advertising and Promotion."

Merchandising committee meeting—Andy DeKonick, general sales manager; Ervin Levinson, advertising manager, Wrigley Stores, Inc., Detroit.

On-the-spot preview of a Pick-N-Pay supermarket opening—J. K. Davenport, director of merchandising, Pick-N-Pay supermarkets, Cleveland.

"The New Look in Advertising"—a panel discussion by operators.

"The Supermarket Industry Speaks, Part II"—trends in advertising-expense ratio.

"Profitable Promotions that Build Sales," by SMI members.

"Better Retail Advertising and How to Produce It," Clyde Bedell, Chicago consultant.

TUESDAY, MAY 26

Theme: "How to Sell More—Profitably Through Better Store Operations."

"The Supermarket Industry Speaks, Part II"—trends in expansion, self-service progress, store hours.

"Efficiency in the Self-Service Meat Department."

"Efficiency in the Produce Department," Raymond A. Higgins, SMI store operations specialist.

"Efficiency in Store Lighting," R. S. Smart, Sylvania Corp.

"Efficiency in Shelving," Richard Niekamp, president, Dayton Display Co., Dayton.

"A New Tool for Greater Operating Efficiency," Paul J. Cifirino, general manager, Supreme Markets, Inc., Dorchester, Mass.

How Manufacturers Can Help Operators Get Greater Efficiency—and SMI presentation.

WEDNESDAY, MAY 27

Theme: "How to Sell More—Profitably Through Better People."

"People Are Money," Elwin Kleihauer, director of personnel, Standard-Humpty Dumpty supermarkets, Oklahoma City.

"How to Plan Effective Personnel Organization in the Store," Ezra W. Moscrip, Cressup, McCormick and Paget, New York City.

"The Supermarket Industry Speaks, Part III"—personnel training.

"Supermarket Growing Pains," A. J. Long, Jr., executive vice president; C. B. Amann, vice president; A. A. Bisameyer, director of merchandising and advertising; C. A. Voris, director of employee relations, Albers Super Markets, Inc., Cincinnati.

"Getting Employees to Think and Work with You," William Oncken, director of civilian training, Bureau of Ordnance, U. S. Navy.



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DISPLAY YOUR COMPLETE LINE AND TELL YOUR PRODUCT'S ADVANTAGES TO ALL THE FREEZER DEALERS AND SALESMEN EVERYWHERE . . . THEY USE THIS ISSUE ALL THE YEAR AROUND

MAY 25

**HOME FREEZER
SPECIFICATION ISSUE**

(This will be a big issue . . . so get your space reservations in early!)



AIR CONDITIONING & REFRIGERATION
THE NEWSPAPER OF THE INDUSTRY

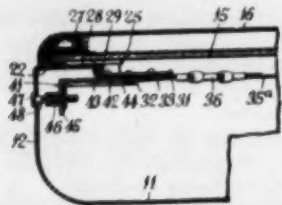
News



PATENTS

Week of December 9

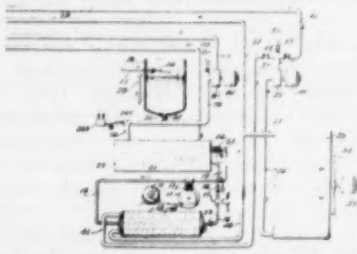
2,620,520. REFRIGERATOR DOOR OR LID. Clare H. Kafer, Palmyra, Mich., assignor to Bevo, Inc., Deerfield, Mich. Application October 27, 1948, Serial No. 56,725. 2 Claims. (Cl. 20-35.)



1. A refrigerator door comprising a pan having a front, depending sides, and inwardly projecting flanges extending from said sides around the perimeter of the door, said flanges at the corners of the doors being of less width than the flanges between said corners, gasket plates secured to the wider flanges adjacent said corners, said gasket plates having elevated steps overlying the flanges at the corners and following the contour thereof, a continuous gasket having a connector section positioned on said flanges, the portions of the connector section at said corners underlying said elevated steps, channel shaped clamps positioned along the wider flanges over substantially the entire distance between the corners and engaging over the connector section therebetween, said elevated steps and clamps being compressed against the connector section to retain said gasket in substantially continuous engagement with said flanges around the

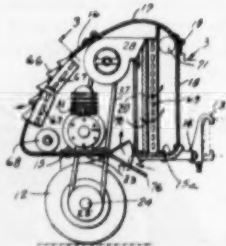
perimeter of the door, and a liner positioned over said plates and clamps to close the cavity formed by said depending sides.

2,620,535. COOLING SYSTEM AND CONTROL. Henry M. Mautner and Alex J. Weiss, Chicago, Ill., assignors to Erwin W. Mautner and Paul E. Unger, doing business as Mid-West Heat Service, Chicago, Ill. Application September 9, 1950, Serial No. 124,034. 18 Claims. (Cl. 62-4.)



1. A system for cooling a machine by a circulating liquid, said system including a refrigerating means comprising an evaporator, a condenser, means for circulating a refrigerant through the condenser and the evaporator and means for controlling the flow of refrigerant between the condenser and the evaporator and dividing the refrigerating means into a high pressure side and a low pressure side, respectively, said system also including means for cooling the condenser by pumping a liquid in heat exchange relation therewith, evaporative means for cooling said liquid, a pump for circulating said evaporatively cooled liquid to the condenser and back to the evaporator, thermodynamic means responsive to the temperature of the liquid which is pumped in heat exchange relation with the evaporator for controlling the temperature of the part of the machine to be cooled, means responsive to a condition of the low pressure side of the refrigerating means for controlling operation of the refrigerant circulating means, and electrical control means for said pumps and for the refrigerant circulating means including switch means for stopping the refrigerant circulating means if either or both of said pumps stop.

2,620,036. AIR CONDITIONING SYSTEM FOR AUTOMOBILES. Robert E. Stanton, Denver, Colo. Application January 3, 1950, Serial No. 136,610. 2 Claims. (Cl. 62-117.15.)



1. A refrigerating device for effecting cooling a moving vehicle having a closed chamber, comprising a wheel mounted trailer frame, a mechanical refrigerator carried by the frame, a refrigerator drive shaft mounted on the frame for rotation, at least one fan operatively driven from the shaft, said refrigerator having a heat exchanger, means for rotating the shaft from the frame supporting wheel, comprising a belt driven by the supporting wheel, a pulley driven by said belt and mounted on the shaft for free relative rotation in one direction, a one way clutch positioned between the pulley and the shaft for effecting conjoint rotation of the pulley and the shaft when the pulley is rotated in the other direction, an internal combustion engine carried by the trailer frame, means comprising a belt for effecting conjoint rotation of the engine crankshaft and the first named shaft, a normally closed throttle valve and a normally open ignition switch operatively associated with the engine, means comprising a centrifugal device operatively connected with and responsive to the speed of the pulley for opening the throttle valve and closing the ignition switch when the speed of rotation of the supporting wheel driven pulley falls below a predetermined minimum, whereby the engine will be started to rotate the shaft, and conduit means connecting the outlet of the fan with the chamber to be cooled, said conduit means being arranged to pass the air into heat exchange contact with the heat exchanger.

2,620,638. PORTABLE AIR-COOLING APPARATUS. Louis A. Grandinetti, Syracuse, N. Y. Application September 7, 1950, Serial No. 123,568. 7 Claims. (Cl. 62-129.)

1. A portable air cooling apparatus adapted to be positioned in a window

Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Ordnance Ammunition Center, Joliet, Ill.; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. Ordnance District Offices do not have information on any other purchases.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q" or, if numbered, the number will be followed by the letter "Q."

DEPARTMENT OF DEFENSE

Description **Quantity** **Invitation No.** **Opening Date**

Purchasing and Contracting Office, 3800 Air U Wing, Maxwell Air Force Base, Alabama

Invitation for Bid /B/ and Requests for Proposal /Q/ are distributed to firms listed in the Bidders List maintained by the above activity. A complete bid set is available for EXAMINATION ONLY by prospective bidders at the Air Regional Offices located in the local trading area of the above activity.

Air conditioning, complete. Job (NO-600-53-89) 27 Apr 53

building 753, 755, 757 and 758, Maxwell Air Force Base, Alabama.

Chicago Quartermaster Depot, Quartermaster Purchasing Division, Chicago, Illinois

Bid forms now available, do not request after opening date.

Display case mechanically cooled. 52 ea. 53-949 27 Apr 53

Purchasing and Contracting Office, Valley Forge Army Hospital, Phoenixville, Pennsylvania

Stainless steel refrigerator 1 ea. (MD-36-049-53-21) 27 Apr 53

Commanding Officer, Middletown Air Force Depot, Olmsted Air Force Base, Pennsylvania

Repair of twenty-one items of kitchen appliances. Various Quantities. 130 29 Apr 53

CG Mobile Air Materiel Area, Brookley Air Force Base, Alabama

Invitation for Bid /B/ and Requests for Proposal /Q/ are distributed to firms listed in the Bidders List maintained by the above activity. A complete bid set is available for EXAMINATION ONLY by prospective bidders at the Air Regional Offices located in the local trading area of the above activity.

Constant temperature cabinet. 1 ea. (01-601-53-382) 28 Apr 53

Chicago Quartermaster Depot, U. S. Army, 1819 West Pershing Road, Chicago 9, Illinois

Display case, mechanically cooled. 52 ea. 53-949 27 Apr 53

District Public Works Officer, Eleventh Naval District, San Diego, California

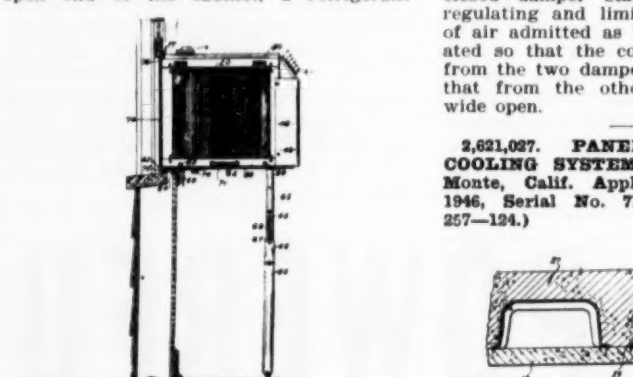
Heating and ventilation system auditorium of bldg. nr. 33 NEL S. Diego. Job 38915 5 May 53

comprising a cabinet open at one end having an opening in the rear wall in proximity to the opposite end of the cabinet, an evaporator mounted in the open end of the cabinet, a refrigerant

when the damper is closed as the motor moves in a direction to open the damper, the other damper moving without movement of the first damper before said closed damper starts to open, thereby regulating and limiting the total volume of air admitted as the dampers are operated so that the combined volume of air from the two dampers is never more than that from the other when the other is wide open.

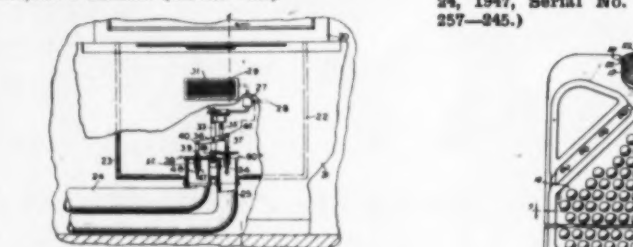
2,621,027. PANEL HEATING AND COOLING SYSTEM. Richard Tatchell, El Monte, Calif. Application December 11, 1946, Serial No. 715,462. 7 Claims. (Cl. 257-124.)

compressor mounted in the opposite end portion of the cabinet, a condenser mounted in the opening in the rear wall in juxtaposition to the compressor, refrigerant flow connections between the compressor, condenser and evaporator, a partition extending transversely of the cabinet between the compressor and said evaporator, a fan housing attached to each side of said partition, a fan mounted for rotation in each of said housings, one of said housings having a central inlet adjacent said evaporator, and a discharge opening through the front wall of the cabinet, the other of said fan housings having a central inlet facing the compressor and a discharge opening through the rear wall of the cabinet, a motor having its shaft extending through said partition into both of said housings and being operatively connected to said fans.



1. In a heat transfer system, the combination of: a wall including a cement base and an outer cement portion having an exposed surface; a fluid circulating means; and a conduit connected to said means and having a cross-sectional outline of an incomplete polygon with projecting flanges secured to said cement base when hardened whereby said conduit and said base define a fluid passage and said base supports said conduit during the placing and hardening of said outer wall portion around and over said conduit, said conduit being formed of thin heat-conducting material with circumferential corrugations substantially increasing its heat-conducting area and its resistance to deformation, and said conduit comprising sections and elbows adjacent of which are connected above said base only by frictional contact throughout overlapping portions thereof.

2,621,028. PLATE TYPE HEAT EXCHANGER SUPPORT. Benjamin G. Newhall, Little Falls, N. Y., assignor to Cherry-Burrell Corporation, Wilmington, Del., a corporation. Application February 24, 1947, Serial No. 730,641. 1 Claim. (Cl. 257-245.)



1. In an air conditioning system distributing apparatus, the combination comprising a pair of dampers controlling mixing of air in said apparatus, a damper operating motor, arm means connecting said motor and said dampers, and yieldable plunger means between said arm means and said dampers, the plunger means being movable relative to its damper toward damper opening position

Purchasing and Contracting Office, Brooks Army Medical Center, Fort Sam Houston, Texas

Refrigerator, #17,180. 15 ea. (MED-41-244-53-13) 27 Apr 53

Working top for Refrigerator, #17,002 (Refrigerator #17,180)

15 ea. (MED-41-244-53-13) 27 Apr 53

Acid-proof Splashback and reagent shelf for refrigerator, #17,003 (Refrigerator #17,180)

15 ea. (MED-41-244-53-13) 27 Apr 53

Directorate of Procurement, Cheli Air Force Depot, Atlantic At Bandini Blvd., P.O. Box 310, Maywood, Los Angeles County, California

Dough fermentation cabinet, 1 ea. (04-603-53-60) 4 May 53

bakers, spray air conditioning unit, automatic control, direct expansion

Cooling system, self contained condensing unit, semi-enclosed reciprocating compressor, 111 x 84 x 96 in. inside cabinet dimensions, Spec MIL-C-2475, K/C AC Motor No. 12CC823195 (P/R SN(64)53-3284.

Yards and Dock, Supply Officer, Port Huene, California

Repair parts F/Copeland Refrigerator Corp. equip. 13 itm 10780/53Q 6 May 53

gasket spring seal RTNR wire etc.

GENERAL SERVICES ADMINISTRATION

Description **Quantity** **Reference No.** **App. Bid Date**

General Services Administration, Business Service Center, Region 3, Washington, D. C.

Air conditioning, 1778 Pa. Ave., N.W., Wash., D. C. Job (GS-R3-B-1918) 1 May 53

General Services Administration, Region 2, Business Service Center, 250 Hudson St., New York 13, N. Y.

Air conditioning for I.E.M. Room, mezzanine floor, Philadelphia, Pa., 1409 N. Broad St. Job None 5 May 53

Fans, electric, 12 inch. 20 ea. (NY-3M-46534) 6 May 53

Fans, electric, 16 inch. 20 ea. (NY-3M-46534) 6 May 53

Business Service Center, General Services Administration, Region 4, 50 Whitehall St., S.W., Atlanta 3, Georgia

Air conditioning equipment, etc., Coddington Building, Charlotte, N. C. Job CR4-445 15 May 53

New cooling tower, etc., U.S. Public Health Service Hospital, Savannah, Georgia. Job CR4-452 9 Jun 53

U. S. DEPARTMENT OF COMMERCE

Chief Procurement Branch, Civil Aeronautics Administration, Old Haslet Road, P.O. Box 1689, Fort Worth 1, Texas

Electric cooking ranges Indefinite 4-53-138 1 May 53

apartment size as needed not to exceed 75

on or before July 31, 1953. Interior and exterior to be enameled. To be crated for export.

CONTRACTS AWARDED THROUGH APRIL 17

U. S. Navy Purchasing Office, Norfolk 11, Virginia

Electric refrigerator, -300 ea., \$41,856.—Westinghouse Electric Supply Co., 2600 Hampton Blvd., Norfolk, Va.

Chicago Quartermaster Depot, U. S. Army, 1819 W. Pershing Rd., Chicago 9, Illinois

Repair parts for refrigeration equipment—6,700, \$44,161.—Carrier Corp., 300 S. Geddes St., Syracuse 1, N. Y.

General Services Administration, 575 U. S. Courthouse, 219 S. Clark St., Chicago 4, Illinois

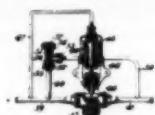
Refrigerators, electric, -33 ea., \$13,461.—Jordan Refrigerator Co., Inc., 58th & Grays Ave., Philadelphia 43, Pennsylvania.

Corps of Engineers, U. S. Army, Office of the District Engineer, New York District, New York 13, N. Y.

Construction of addition to central heating plant at Griffiss Air Force Base, Rome, N. Y. Invitation No. ENG-30-075-53-342.—Job, \$773,773.—A. Dierks & Co., Inc., 159 West St., Brooklyn, N. Y.

in closely spaced or abutting relation, if desired under compression, upon a pair of support members forming part of a frame which is provided with means for increasing the space available to the plate-like elements on the support members, each element being provided with notches at opposite ends for receiving said support members, characterized by the feature that each plate-like element is carried by one of said support members and is stabilized against lateral displacement by engagement of the other support member with the notch in the associated end of the element, and that a retaining member is disengageably associated with the plate-like element in a position to bridge the last mentioned notch, there being a clearance between said retaining member and either the plate-like element or the stabilizing support member to permit movement of the plate-like element in the direction of a line connecting the two notches.

2,621,051. VALVE CONTROL FOR THE HEAD PRESSURE IN REFRIGERATING SYSTEMS. Israel Kramer, Trenton, N. J., assignor to Kramer Trenton Company, Trenton, N. J., a corporation of New Jersey. Application November 13, 1948, Serial No. 59,836. 5 Claims. (Cl. 277-53.)



1. Control mechanism adapted for installation in the compressor discharge line of refrigerating apparatus comprising, an automatic modulating valve having a fluid passage therethrough provided with inlet and outlet terminals, fluid conduits connected with the terminals of said passage, a by-pass fluid conduit spanning said valve and connected with said first named conduits, and a valve actuating tube connecting the modulating valve with the conduit that is connected to the inlet terminal of said passage.

168,339. REFRIGERATOR CABINET DOOR HANDLE. Montgomery Fera, Detroit, Mich., assignor to Seeger Refrigerator Company, St. Paul, Minn., a corporation of Minnesota. Application July 18, 1952, Serial No. 30,675. Term of patent 3 1/4 years. (Cl. D67-3.)



A device, for example for heat exchange or filtering purposes, of the type in which a number of plate-like elements are held

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4-27-53

Wider Diversification of Lines Leads Appliance Mfrs. To Use Product Mgrs.

NEW YORK CITY—The wider diversification of product lines by appliance manufacturers to compete in today's buyers' market is leading more of them to adopt a "product manager" type of organization in order to provide satisfactory management control over their product programs, according to Inwood Smith, who is assistant to the general manager, Crosley Div., Avco Mfg. Corp.

The full product line, consisting of all major home appliances, appears to be the goal of many manufacturers in the appliance industry, and this development will require possible changes in the organizational setup of these companies, Smith said in a speech prepared for delivery before the annual manufacturing management conference of the American Management Association in New York City.

In order to achieve the most efficient management control over their wide variety of products, Crosley has established a product manager organization whereby product man-

agers are assigned to handle each of the major product programs, Smith pointed out.

These product managers report directly to top management and are responsible for coordinating and handling of operating activities pertaining to their product, including engineering development, planning and scheduling, purchasing, manufacturing, and other activities up to the point of the actual sale of the product, he explained.

Although it has been necessary to modify this system of organization at Crosley from time to time to compensate for the addition of new products, the basic type organization has been in effect over a period of years and has been quite successful in providing for the satisfactory handling of management functions on these programs, Smith explained to the group.

"We are assured that each of our products will receive the proper attention during all phases of its development and production," he pointed out.

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POSITIONS WANTED

AIR CONDITIONING and Refrigeration Service Manager past 6 years. Total 12 years' experience—principally industrial work. 2 years' technical training plus evening school courses. Now employed by upper Midwest distributor. Desire climate change. Interested in Southwest area. Available soon. BOX 4291, Air Conditioning & Refrigeration News.

ENGINEER, REFRIGERATION and air conditioning, desires responsible position with an aggressive company. Can get along well with people. Good idea man. Have air conditioning and refrigeration background with a major contractor. Some sales experience. Also good product development background with manufacturer. BOX 4293, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

REFRIGERATION MANUAL writer—Progressive Chicago appliance manufacturer has opening for a technical writer to prepare service and operating manuals for household electric refrigerators, room air conditioners, freezers, and other major appliances. Experienced writer preferred, but will give full consideration to person with sound knowledge of refrigeration service practices and the ability to express ideas clearly and concisely on paper. Permanent position. Submit resume of experience and salary requirements. ADMIRAL CORPORATION, 3800 W. Cortland St., Chicago, Illinois.

EXPERIENCED REFRIGERATION service mechanic for commercial work in air conditioning and refrigeration. Steady employment. Apply WILSON ELECTRIC COMPANY, 113 South Madison Street, Rockford, Illinois, or phone 3-5474, Rockford, Illinois.

FIELD SERVICE engineer for Indiana, Ohio, Michigan. Age 32 to 42, living in northern Indiana or southern Michigan, with 10 or more years' experience, preferably food store refrigeration. No installation or service responsibility. We are looking for a capable man who wants to lay down his tool box for a better opportunity. One of the largest manufacturers of food store equipment has an excellent opportunity for a man free to travel in a definite territory without family interference. Salary, expenses, insurance, etc. Also a man for the eastern and New England states living in a mid-eastern state. Apply by letter, giving full particulars, with recent photograph. BOX 4283, Air Conditioning & Refrigeration News.

GENERAL SALES manager. Rapidly expanding major appliance concern looking for a highly qualified and experienced man. Salary open. Must be able to handle national sales organization. Write outlining experience. All correspondence will be confidential. BOX 4285, Air Conditioning & Refrigeration News.

SUPERINTENDENT OVER manufacturing operations consisting of sheet metal fabrication, finishing, compressor machining and assembly of air conditioning

units. Plant located in metropolitan New Jersey area, with well established company. Mail complete resume stating salary requirements to BOX 4287, Air Conditioning & Refrigeration News.

AIR CONDITIONING ENGINEER experienced with design, test, and dehydration of room air conditioning units. Excellent starting salary. This is a long range program and unusual opportunity for the right man with a leading manufacturing company located in New York City. Write full details. BOX 4290, Air Conditioning & Refrigeration News.

WANTED REFRIGERATION and air conditioning service and installation man by dealer in southwestern Ohio near Cincinnati. In reply give age, full experience, type installations, etc. This is year-round work at a good salary. Commission on all sales made. Good living conditions for a family man. BOX 4292, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE—York condenser—max. W.P. 225 lbs., max. temp. 400G, test pressure 340 lbs. air, refrigerant Freon 12. For 25 ton unit. Has never been used as condenser. Will accept reasonable offer. BARCLAY REALTY CO., 1445 Beach Drive So., St. Petersburg, Fla.

BRAND NEW—140 1/2 H.P. Tecumseh model S341L-110V-60 cycle condensing units: 20 3/4 H.P. Tecumseh model HA75LT-110V-60 cycle condensing units. All at special low prices. C & M MANUFACTURING CO., 712 South 23rd Avenue, Phoenix, Arizona.

NEW UPRIGHT freezer—21 cubic feet; over 700 lb. capacity; Modern design; gleaming white exterior; extra-quick freezing with freezer plate shelves. Complete with 1/2 h.p. Chieftain sealed unit self-contained; Ranco Temperature Control; F-22 Gas. Dealer Price \$359.00. Special discount for quantity. GENERAL REFRIGERATORS CORP., 2011 First Ave., N.Y.C. ENright 9-0200.

SPECIAL OFFERING 1/4-HP domes (motor compressor assemblies) Model S64 @ \$33. Also following complete units. 1/4-HP sealed @ \$45. 1/2-HP sealed @ \$55. 3/4-HP sealed @ \$70. Other sizes up to 5-HP. Write for specifications. Limited quantity. Act now. MANN REFRIGERATION SUPPLY CO., 440 Lafayette St., NYC, GRamercy 3-8000.

DISTRIBUTORS, WHOLESALERS wanted. Sensational Kesco air conditioner condenser water disposal unit 9 inches high. 8 OPEN TYPE 7 1/2 H.P. Copeland Complete tank pump float and check valve. Pumps to a 12 foot head. Kesco outstanding all can be purchased for \$595.00 with the greatest value on the market. Lists \$50, retail 20% off. KESCO PRODUCTS CORP., 115-31 Sutphin Blvd., Jamaica 4, N. Y.

8 OPEN TYPE 7 1/2 H.P. Copeland Condensing Units in original crates. One or all can be purchased for \$595.00 with the motor and \$495.00 less the motor. RELIABLE MACHINE WORKS, INC., 238 Eagle St., Brooklyn, N. Y.

ATTENTION SERVICEMEN—Send for our 1953 Catalog. Relays, Expansion Valves, Controls, Dehydrators, V Belts, Open & Hermetic Units. All new merchandise at great savings up to 50%. Sold on Money Back Guarantee. WALTER W. STARR REFRIGERATION, 2833 Lincoln Ave., Chicago 13, Illinois.

Warehouse To Have Capacity To Quick-Freeze One Million Lbs. of Food Simultaneously

MEMPHIS—One of the largest cold storage warehouses in the nation will be opened here in May by the new Mid-South Refrigerated Warehouse Co.

Located on an 8-acre tract of land, the 250 by 407-ft building will have 1,300,000 cu. ft. of all-freezer cold storage capacity with equipment sufficient for quick-freezing simultaneously 1,000,000 lbs. of foods, such as fruits, juices, berries, vegetables, meats, eggs, and seafoods.

Modern in every respect, the new \$2,000,000 warehouse was started after officials of the Mid-South Refrigerated firm had visited over 30 other refrigeration plants throughout the nation and Hawaii. Ground was broken in August, 1952.

9 FREEZERS INCLUDED

The single floor concrete and steel building includes five large freezers, each 50 by 200 ft. and 4 smaller freezers 50 by 50 ft., 900 lineal ft. of enclosed loading docks for trucks and railroad cars, 1,600,000 board ft. of Fiberglas low temperature insulation, an intercommunications system, complete mechanized materials handling equipment, York refrigeration equipment, a Niagara Blower system in the freezers with no-frost equipment, and a complete sprinkler system.

The entire refrigerated portion of the building is enclosed in Fiberglas cold storage insulation. Walls and floor have 8-in. of insulation, and the roof has 10 in.

Angier brownskin paper was adhered to the cold inside of the concrete sidewalls as a vapor barrier and dry installation of the insulation was made. The 2 by 4 ft. insulating boards were installed in 3 layers with the cold or freezer side covered with perforated Masonite panels held in place by Wolmanized treated wood studding.

HOT AIR CAN BE FORCED THROUGH TILE

In the construction of the building at Parkway and Spotswood Sts., precaution was taken against frost-heave by inserting 8-in. tile on 8-ft. centers enclosed in gravel and running crosswise with the building. Hot air may be forced from the engine room through the tile.

Thermocouples are located underneath the floor and connected with a precision indicator in the engine room to show fluctuating temperatures under the freezer floors, and thus determine when to start the hot air flow through the subfloor tile system.

Tilt-up or pre-cast wall construction was used with concrete panels 25 by 27 ft., each weighing 19 tons, poured on the 2 1/2 acre concrete slab floor. The panels, probably the largest yet designed for such construction, were lifted into place by huge cranes.

The roof also is concrete prefabrication, supported by steel columns, girders and bar joists. The roof is covered with white marble ships to deflect sun rays and reduce refrigeration needs.

DETAILS ON FREEZER CONSTRUCTION

Each of the nine freezers is 20 ft. high with 16-ft. piling clearance. The five large freezers are designed for -20° F. Each has four quick-freeze areas with each of the 20 quick-freeze tunnels having a capacity of 50,000 lbs. of fresh produce.

The four smaller freezers are designed for -10° F. The freezing tunnels are especially adapted for the quick-freezing of fruits, berries and vegetables grown in the nearby farming section, which has excellent soil, water and climatic conditions to produce such commodities in large volume. The company also has plans for locating processing plants on its property, and quick-freezing facilities will be afforded the operators of these plants.

For fast loading and unloading of rail cars and trucks, and to protect products from crushing, all entrances to the freezers are 8 ft. wide and 8 1/2 ft. high, sufficient to clear 4,000-lbs. capacity Ellwell Parker materials handling forklift trucks. Freezer doors are of the infitting type, with flapper doors in the entrance vestibules.

The completely enclosed loading docks for trucks extend 350 ft. on each side of the building. They are 25 ft. wide on one side and 20 ft. on the other. The loading dock served by the private spur from the South-

ern Railway System main line, along one end of the building, is 20 ft. wide and 200 ft. long.

There are five loading doors on the railroad end of the building and 19 loading doors on the two sides for trucks. The three docks, and the 32 by 200-ft. sorting and assembly room at the south end of the building, all have 4 in. of Fiberglas roof insulation. The docks completely envelope the freezer areas and thus give added protection to the freezers.

The building was designed by A. Epstein & Sons, Inc., Chicago engineers and architects. The general contractor was Southern Builders, Inc., Memphis.

The Fiberglas insulation contractor was the M. H. Ellis Co., Memphis distributor-applicator for Fiberglas pipe covering, air filters, Aerocor and other insulation made of fibrous glass.

While the Mid-South Refrigerated Warehouse Co. is a new concern, its officials are by no means new in the cold storage business. Practically all of them are associated with the Memphis Cold Storage Warehouse Co., the oldest and largest refrigerated warehouse in Memphis before the new construction by Mid-South.

William W. Goodman is president of both companies, and T. E. McCrary is vice-president and general manager for the two firms. Other officers of Mid-South are Charles F. Goodman, vice president, Abe Goodman, Jr., treasurer, and Herbert Glazer, secretary.

Schiffman Will Inspect Tenney Stratosphere Test Chamber In France

NEWARK, N. J.—Saul S. Schiffman, secretary and treasurer of Tenney Engineering, Inc., here, will visit Europe in April and May, particularly to inspect a new Tenney stratosphere test chamber now being installed for the French Air Ministry at Palaiseau, near Paris.

In addition to assignments in France, Schiffman will visit Great Britain, Italy, Switzerland, and Israel.

The new French test chambers—paid for by the French Government with French funds—will be used in expanding France's experimental rocket program. Materials, parts, components, sub-assemblies, and assemblies will be tested under a wide range of simulated temperature, humidity, and altitude conditions.

The installation comprises two units—one a 36-cu. ft. model, the other a large "walk-in" chamber. Both have temperature ranges from -70° C. to +93° C.; humidity regulation between 20 and 95%; and altitude control to 80,000 ft.

The chambers are equipped with automatic program controls to make it possible to cycle weather conditions automatically according to pre-set patterns. Design specifications, more demanding than most U. S. specs, require temperatures to rise or fall during cycling at the rate of 2° C. per minute, the chamber continuing a 2-kw. operating load.

Bernard Friedman, of Tenney's engineering staff, has been supervising the installation.

SHERER gives you
"DOUBLE PROFIT" PRODUCERS
SHERER cases give your customers a double profit:

1. Increase sales up to 300%
Design based on 100 years of making food merchandising more profitable creates more impulse buying.
2. Provide savings up to \$210.00 annually
Savings result from patented, exclusively SHERER refrigeration system* which cuts unit running time as much as 15%.

Atomized Air — Directional Flow — Recirculated Air

MODEL 3100CS has big display capacity for high profit, fast-moving items.

MODEL 3008CS frozen food merchandiser with extra capacity and a truly continuous display when two or more are joined.

MODEL UL2710CS reversible-conversible self-serve case that adapts its 4-in-1 convertibility to needs of individual market.

MODEL UL3200MB multi-purpose merchandiser for produce or dairy products.

MODEL 70-SD wall type sliding door refrigerator with marvelous display value.

THE SHERER LINE IS COMPLETE — WRITE FOR FRANCHISE INFORMATION

Be Sure With SHERER

SHERER-GILLET COMPANY, Marshall, Michigan

CRMA Cautions Against Too Loose Credit --

(Concluded from Page 1, Column 5) if any, areas in the country today that have not received the full effect of the food retailing expansion boom that got under way shortly after World War II, with the result that the odds are heavily against new ventures, especially if the operators put little of their own capital into them.

Many equipment dealers are also agitating for more liberal terms, because of the influence of a general weakening in consumer goods credit requirements, as evidenced by the "no money down—forever to pay" offers being advertised with steadily increasing emphasis. It was pointed out that offering more liberal terms in financing refrigerated fixtures than past experience has shown to be economically sound imposes a greater financial risk than the average manufacturer or dealer is able to assume, particularly at a time when a general tightening up of bank credit suggests extreme caution.

INCREASING COSTS CUT INTO PROFITS DESPITE HIGH SALES

A review of the industry's operations during 1952 showed that while in some instances individual manufacturers were able to increase their sales volume materially, increasing costs have had the same depressing effect on profits as was the case last year with American industry generally.

It was estimated that this reduction in dollar profit income, after taxes, was between 30% and 40% for the group as a whole.

By continuing to develop greater production economies, through incentive plans, more efficient materials handling methods, etc., along with a further paring down of overhead expenses, the industry looks for a somewhat better profit picture in 1953, with sales volume showing a gain over last year variously estimated at from 10% to 25%.

Sales of frozen food equipment, including self-service cases and upright commercial freezers, will account for the bulk of the gain, it was believed. Other additions to volume are expected from the new lines of specialty products added by several leading operators in recent months, including window coolers and home freezers.

'GUESSTIMATING CONTEST'

Each year CRMA sponsors a "guesstimating contest" to encourage the use of industry statistics and the wealth of information on the business outlook in the financial press and trade publications as long-range guides to their own prospects. Individual estimates of the industry's probable volume in the ensuing year are submitted at each Spring meet-

ing, always held in April. These are then sealed for examination a year later.

Best "guesstimating" in assessing the industry's 1952 volume probability was Chauncey V. Hill, Jr., of C. V. Hill & Company, whose prediction came within 3/10 of 1% of the actual total. The next closest estimate was that of William J. Stelpflug, of Hussmann Refrigerator Co., with a discrepancy of only 1/10 of 1%. The average of all predictions was within 9.73% the target total.

MATERIAL PRICES SEEN REMAINING ABOUT THE SAME

It was brought out that although the recent suspension of OPS price ceilings had resulted in higher quotations from many suppliers of raw materials and components, these had thus far proved to be mostly "asking prices," with the probability that as demand for some requirements diminishes, due to the downturn in other lines using the same materials, actual prices will continue on about the same level.

It was also emphasized that manufacturers have been carrying abnormally high inventories, especially items formerly difficult to obtain under CMP restrictions, so that the average manufacturer can afford to conduct his purchasing policies along much more cautious lines, on the theory that "what goes up today may go down tomorrow." The current unbalance of many inventories also suggests a general levelling of the price structure, it was felt.

Among the discussion leaders were J. W. Wooldridge, Seeger Refrigerator Co.; William Fogel, Fogel Refrigerator Co.; William T. McCall, McCall Refrigerator Co.; W. B. McMillan, Hussmann Refrigerator Co.; Reese L. Harrison, Friedrich Refrigerators; J. H. Coolidge, Sherer-Gillett Co.; F. L. Beets, Viking Refrigerators; Emory S. Fowler, Fowler Equipment Co.; and Leonard U. Shapiro, United Refrigerator Co.

CRMA's president, Millard Mayer, of Koch Refrigerators, who presided at the meeting, announced that the executive committee had accepted an invitation to hold the next industry Plant-tour and Production Conference in San Antonio, Dec. 3-4-5, when association management and sales executives, along with their engineering and production staffs, will be guests of Friedrich Refrigerators.

It will be the third such meeting sponsored by CRMA as a means of exchanging on-the-spot information for the betterment of equipment standards and manufacturing techniques generally, others having been held in 1948 in St. Louis, with Hussmann Refrigerator Co. as host member, and last December in Niles, Mich., when Tyler Fixtures Corp. opened its plant to the group.

Giving Prospects Frozen Food Sample Boosts Freezer-Food Plan Sales Volume

CHEYENNE, Wyo. — Polar Bear Lockers, which recently inaugurated the Polar Bear Wholesale Food Plan, reported that business has more than tripled this year under the new plan, which includes the sale of Coolerator home food freezers.

A "gimmick" which has accounted for literally hundreds of good prospects, according to the management, is the giving of a package of frozen vegetables of the prospective customer's choice when she permits a representative from the firm to visit her home and explain the food plan. No obligation is entailed in accepting the gift.

The most effective type of advertising has been the reproduction of letters from satisfied local customers in the local newspaper ads, the management also pointed out. Permission is obtained from the customers to use these letters and the names are used to lend complete authenticity. A typical letter reproduced in a four-column ad reads:

"Dear Sirs: We thought that we would like to let you know in a letter from us, how wonderful we think your food plan is. Although there are only two of us it has worked out very satisfactorily. You recall we bought an extra large freezer because of our future plans, and we are only spending \$8 more than what we spent before on our food. You recall my husband is an accountant and did not think we could actually have a freezer for as little as \$8 a month. What is more important to

my husband and I is that we are eating better than ever before.

"Part of my doubt was removed by my sister in Fort Collins who has been using your plan for a period of seven months, but for those who don't know anyone on a food plan we would recommend yours."

N. Y. Serial No. Bill --

(Concluded from Page 1, Column 2) mobiles, licenses are issued only after such serial numbers are recorded.

"The legislative intent is specified as being to punish those who tamper with serial numbers for the purpose of preventing the detection of a crime or defrauding the manufacturer or purchaser of such machine.

"The present bill appears to depart from this purpose and standard by eliminating the element of intent, and making the offense described a police regulatory one. As such, it has slight relation to detecting thefts or frauds, especially since it does not deal with second-hand sales.

"Stolen articles are most usually found in the second-hand market. It thus can easily become a device to help enforce manufacturers' restrictive sales policies, or fair trade laws. It is not the proper function of this penal statute, we believe, to do this.

"Injunctive relief, or civil remedies, are available to aggrieved manufacturers, and the criminal courts should not be a forum for the settlement of essentially economic disputes."

Linder, Rieger --

(Concluded from Page 1, Column 4)

Willard H. Sahlhoff, general manager of Electronics Div., Radio and Television departments, will become general manager of the Small Appliances Div.

Rieger, the new general manager of the Major Appliance Div., joined General Electric in 1936 as a student engineer, first in Detroit and then in Schenectady. In 1937 he was transferred to the General Electric fractional horsepower motor plant at Fort Wayne, Ind., as sales engineer.

For two years during the war, he was assigned to Wright Field in Dayton, Ohio, in charge of General Electric work and then returned to Fort Wayne in 1944 as proposition engineer. He went to the Bridgeport works as assistant commercial engineer for the home laundry division in January, 1946, and was promoted to commercial engineer the following August.

In 1947 he was appointed manager of the company's heating devices and fan divisions and in 1950 he became manager of the Household Refrigerator Div.

When the company's Appliance and Merchandise Department was split into the Major Appliance and Small Appliances divisions in 1951, Rieger was appointed general manager of the Small Appliances Div. In January, 1953, he was elected a vice president of the company.

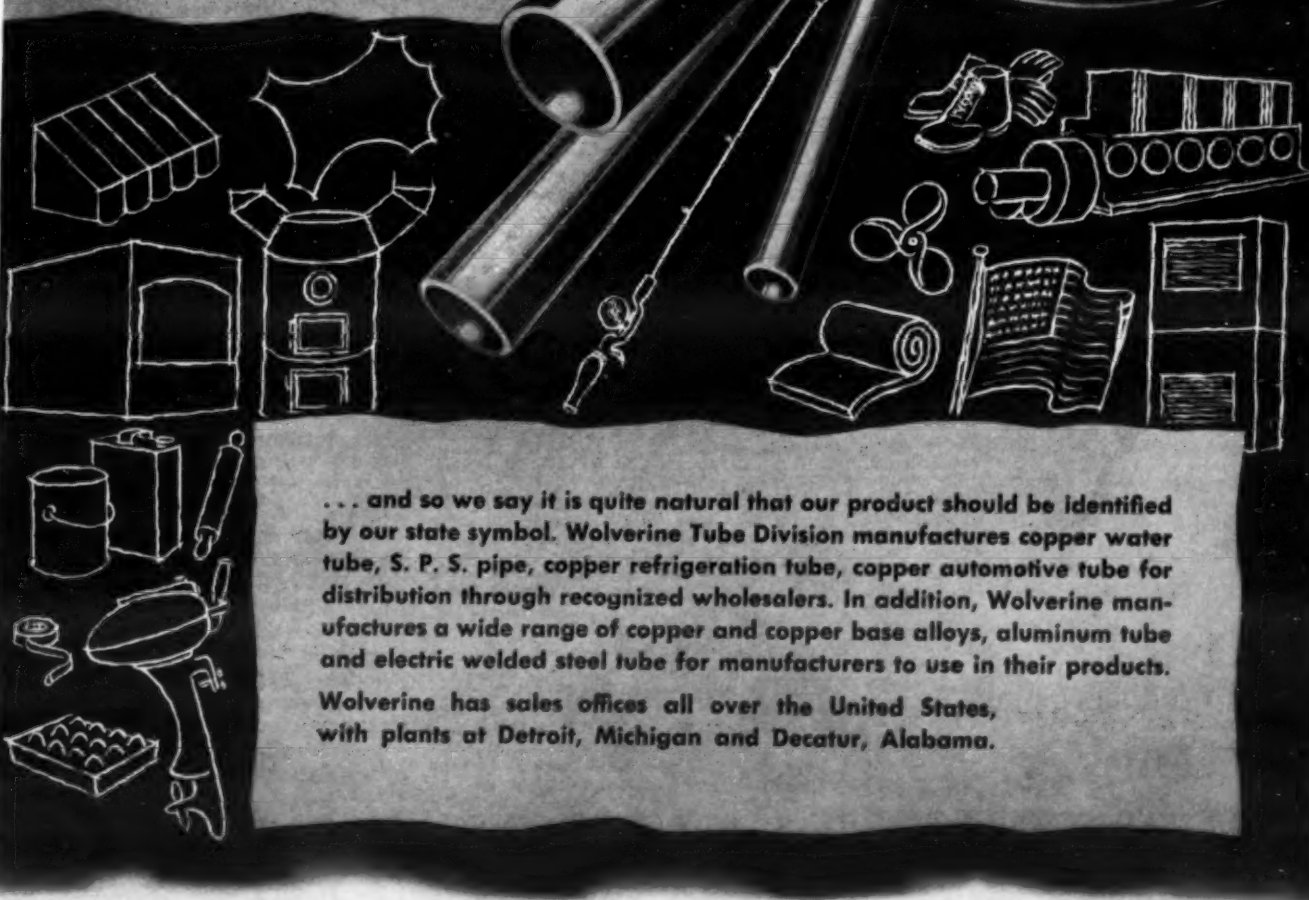
Linder, who also was elected a vice president of the company in January, 1953, has been general manager of the Major Appliance Div. since 1951.

It's natural for our tube to be named WOLVERINE

Michigan, you know, is called the wolverine state; and many products that emanate from Michigan bear this popular name.

There are several other states known by names of animals: Minnesota, the gopher state; Oregon, the beaver state; South Dakota, the coyote state; Wisconsin, the badger state.

Just as a matter of interest, let's show in sketch the host of varied products that are identified by the name Wolverine:



... and so we say it is quite natural that our product should be identified by our state symbol. Wolverine Tube Division manufactures copper water tube, S. P. S. pipe, copper refrigeration tube, copper automotive tube for distribution through recognized wholesalers. In addition, Wolverine manufactures a wide range of copper and copper base alloys, aluminum tube and electric welded steel tube for manufacturers to use in their products.

Wolverine has sales offices all over the United States, with plants at Detroit, Michigan and Decatur, Alabama.

WOLVERINE TUBE DIVISION

of CALUMET & HECLA, INC.

Manufacturers of Tubing Exclusively

1413 CENTRAL AVENUE • DETROIT 9, MICHIGAN

Plants in Detroit, Mich. & Decatur, Ala. Sales offices in Principal Cities

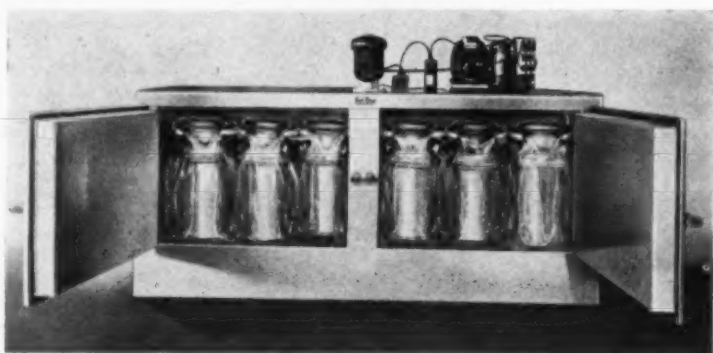


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COOL FAST ... SELL FAST!

FROM 95°
to
40°
in
ONE HOUR

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Sub-Zero—the fast cooling, fast selling, complete line of milk coolers features front opening doors, low lifts, non-rust aluminum exterior, sealed refrigeration units, economical operation. Both Cascade (Deluxe) and Spray Types in 4, 6, 8, and 12 can capacities. Write today for information.

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MADISON, WISCONSIN

• MILK COOLER

• FREEZERS

• AIR CONDITIONING